THE ANDES AND THE AMAZON

By the same Author

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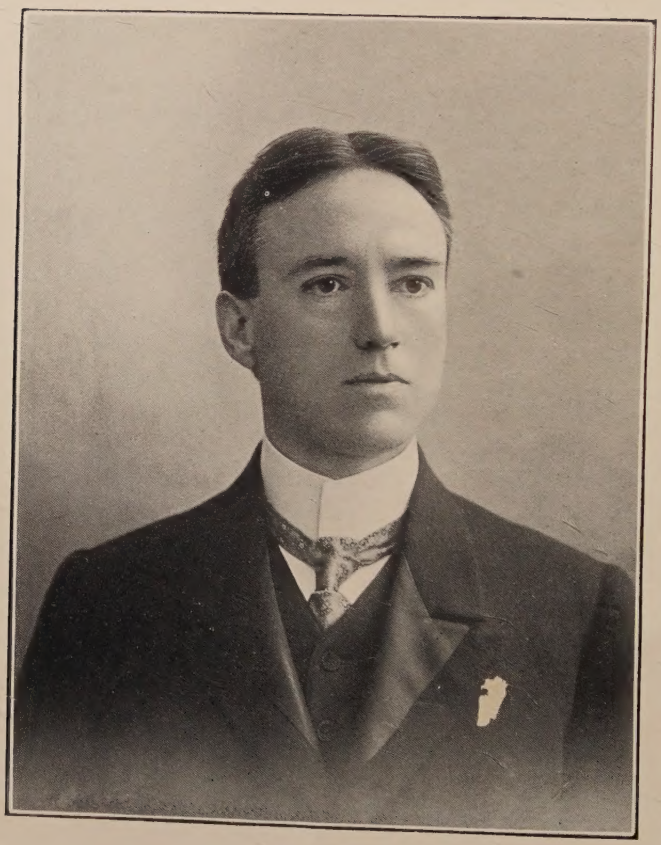

Yours Truly
C. Reginald Enock

THE ANDES AND THE AMAZON

LIFE AND TRAVEL IN PERU

BY

C. REGINALD ENOCH, F.R.G.S.

WITH FIFTY-EIGHT ILLUSTRATIONS

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PREFACE

PERU is a country covered with a certain halo of romance—the romance of history; of that time when continents were found, taken, and explored; the romance of a civilised and little-known race—the Inca—extending back before the keels of those old caravels from Europe ploughed the seas of the New World; the romance of the Spaniards, picturesque and cruel; the romance of Nature in her most stupendous operations, her Andean and Amazonian handiwork.

The true traveller must not banish the natural sentiment of such portentous matters from his vision. It is not a sentiment which will render it opaque, but is rather the stimulus of imagination, which directs his steps and urges his pen and pencil to the portraying of the things which pass before his senses.

Moreover, the true traveller must be an Universalist. That is, he must see the good of things, the good which penetrates everything in conjunction with, or in superior relation to, the so palpable evil of Man and Circumstance. The bare wilderness and the poor Indian have some use and intrinsic value, as well as the cultivated valley and the civilised dweller of the cities. Loyal to Nature and the universe of which he is a part, the traveller and observer will be an impartial judge; he will ever refrain from "drawing up an indictment against a whole nation," or from hastily condemning any existing thing.

Let me, therefore, in this spirit, paint something of the picture in my mind, the impress of long sojournings and journeyings within that little-known region of the western sea: that fascinating land of Peru.

A blue ocean is beating gently upon a thousand miles of sandy coast, backed by the far ranges of the Andes all along, which tower up faintly into an equally azure sky. I see yellow, burning sands from which the shimmering heat-mirage arises and shrouds the track over which I have come, and over which I must continue. Beyond, are the blue mountain ranges, and from them arise the white porcelain-gleaming peaks where everlasting snow abides. I ascend, and see and feel terrific storms—the wind, and rain, and hail, and snow come out of their abiding-places and beat upon the head of the traveller. There is no shelter; man scarcely inhabits these inclement altitudes of the Andes. There is no human habitation here. . . . None? What, then, are these—ghostly castles and dwellings which appear from out of the mist on yonder hill? Are they not the habitations of man? . . . They were, centuries ago; and a busy population thrived and had its being within those old stone ruins. But no man lives there now. I descend and traverse fertile valleys, and now I reach the borders of the Montaña—the boundless forests of the Marañon and Amazon, extending away for ever, it seems, towards the sunrise. I have traversed Peru, and crossed the Andes from west to east!

Blue seas, cities with white-domed churches, green plantations, burning deserts; gleaming, snow-capped peaks and eternal snow-fields, rushing streams, mysterious ruins, villages nestling against hill-slopes, sandalled Indians with flocks of llamas, herds of alpacas, high plateaux, across which cold winds blow inhospitably; azure lakes, impenetrable forests, and endless rivers. All these rise before my vision as I write. They start from

the mists which bathed them on the heights, or the mirage of the plains; and the mist, mirage, and halo of memory and romance attend them.

And what of the history of this strange land? Out of the fabled lore of the past arise the figures of the founders of the Inca dynasty—Manco Capac, Child of the Sun, born of virgin birth, and with his sister-wife establishing the great capital of Cuzco where were wrought into a nation the numerous and warring Indian tribes of those vast Andean regions. The long array of Inca Emperors and the civilisation they maintained; the advent of the Spanish, the adventures and atrocities of Pizarro and his companions; the destruction of a primitive civilisation, and the planting of another by sword and cross, accompanied by such methods against Nature as even to-day bear their evil fruit—as acts against Nature ever must.

And then the adventurers from Britain, their enterprise aroused by Spanish success and spoils of gold and treasure, and their rude honour abhorrent of Spanish cruelty and pretensions—Drake and his fellow-buccaneers. How they swept around the Horn, harried those coasts, and disturbed the rule of Viceroy, Governor, and Priest upon those peaceful shores! How well, indeed, may the Colonial chroniclers of Spain narrate their exploits!

And what of to-day and to-morrow in Peru? A nation long torn and disrupted by civil strife—the selfish and unrestful pride, and distorted ideals of liberty and individualism which the South American inherited from the Spaniard, now giving way to the reign of sense and humanity born of the spread of science and the world-march of truth and fair opinion. For the heart of the world is throbbing swiftly; changes and influences are strongly working, and no man and no nation can now be isolated or exempt therefrom. Internecine warfare and the rapacity of neighbours brought the country low

indeed; but the present reveals progress, and the future holds forth hope. The race, like the territory it inhabits, contains unknown possibilities: resources lying dormant, waiting the hour when Nature and Time shall call upon them to perform their functions and fulfil their destiny.

The consciousness of progress and betterment in a community, when it occurs, is unmistakable, although the condition may not be one which can be measured by distinct data of time or circumstance. Such matters are rather indefinable, like all great changes in Nature's marshalling of Man. Such a change is taking place in Peru: that vast territory bordering upon the Pacific Ocean, and extending inwards into the heart of the South American continent, whose small population occupies a region—an empire; whose resources and conditions are still but little known to the outside world.

The Republic of Peru, like all other communities of Spanish America, has endured its baptism of sword and priestcraft. But the Peruvian proclaims that the day of metamorphosis is at hand; and, as will be shown, he is losing some of the evil conditions which were grafted upon his country by his progenitors. The three main causes which have dominated the community to their hurt have been political methods, militarism, and clericalism; but these are now giving way to the principles of fair government which the inexorable march of civilisation demands.

In politics the "Caudillo"—a word which hardly has its translation in English, unless it be the American "Boss" of Tammany dialect—tends to disappear. These political "wire-pullers"—candidates for the Presidency, supported by those followers who sought only their own ends—have in Peru long prostituted the term of Republicanism. But their domination is threatened now with extinction. As to militarism, the sword is falling also into the crucible of reformation, which may trans-

form it from the oppressor of its country into the defender thereof, for the tendency to civil strife is disappearing. And the retrograde influence of the Romish Church is waning, dying a natural death; or will do so if its exponents fail to adapt their machinery to the needs of modern intelligence and awakening truth.

But it is no less in the general tone and method of thought and aspiration of the people that the change is evident. In the capital, as in the provinces, any suggestion of revolution needs no burning of powder to put it down; it is rather frowned down by popular feeling, by the citizens who, from the highest to the lowest, see the vanity of former ways. This has been exemplified in the election of the last and present Presidents, when the laws of voting have been more respected.

There is a spirit arising among the upper class regarding the development of the resources of their country which is in contrast with the lack of enterprise formerly displayed. The professions of the Army, the Law, and Politics, so much sought after by the Spanish American, who, sometimes contemptuous of the truly producing avocations, has been content to live at the expense of, rather than to the benefit of, his country, are no longer considered the only ones to be followed. Engineering as a profession, for example, is much esteemed and followed by the younger generation, and it is safe to say that such a condition is a mark of progress. If these matters are yet only upon a small scale they are significant, nevertheless, of some renaissance in the body politic. They are allied to the true interests of the soil—the only real base of national greatness for Peru; and as to the resources of their soil, the Peruvians have a heritage which must some day afford them great things.

For Peru is a country, as the observant traveller may bear witness, endowed with everything in the mineral and vegetable world which could make its inhabitants prosperous. The gold-fields contain gold whose value may take rank with those of any other country; the silver mines have been famous for centuries; the iron, copper, lead, and quicksilver deposits will be the base of much wealth; and the coal-beds might render the country in the future a manufacturing nation.

Peru contains all the products of the tropical, semi-tropical, and temperate zones; and her 1,400 miles of Pacific littoral, and situation upon the largest system of navigable waterways in the world—the Amazon and its affluents — must some day cause her to become the centre of a busy and extensive population. If she can now but assure stability within and peace without, an era will have arrived for her which is the commencement of real progress.

It is a good sign, with nations as with individuals, when the misfortunes of the past have come to be looked upon as chastening events in their history; as events which, bitter at the time, have brought some benefit in disguise, and some enduring lesson. This has taken place to some extent with regard to the loss of the riches of their nitrate fields, which were taken from Peru as indemnity by the Chilians during the war. Many Peruvians state that they look back upon that as the source of too easy a revenue; that corruption resulted from its enjoyment, decay of national morals and the engendering of dishonesty. "All of these qualities," the Peruvians say, "have been inherited by the Chilians along with their ill-gotten gains, and are rapidly bearing their evil effect." Be that as it may, the justice or injustice of those events relating to Tarapaca and Tacna and Arica is not to be considered lightly; but there is probably much that is true in the Peruvian view, and it

is doubtful if much lasting good has accrued to the Chilians as a nation from the valuable possessions they acquired, and the large revenues from the nitrate fields which they enjoy.

The relations of Peru are, preferably, friendly with all her neighbours: that is, as friendly as it is possible to be under the conditions of ill-defined boundaries of frontiers, and other clashing interests. A disposition is growing among all these Republics, happily, to submit their boundary disputes to arbitration, and to abide by the result.

And it is very necessary to define these boundaries, for, unknown and uninhabited as the vast territories which they enclose are, some day they must figure largely among the "assets" of the globe. As for Peru, every diversity of climate and topography is hers. I have often stood upon the summit of the Andes, on that perpetual snow-cap where the aneroid shows 16,500 feet above the sea, and watched the snowflakes falling. On the one hand where they fall they melt and fade into the streams which descend to the Pacific. On the other they merge into the rivulets, which in gathering volume rush eastwardly to where, a thousand leagues away, the vast Amazon debouches into the Atlantic Ocean.

"Do not write of the Incas; of our buried temples; of a past civilisation," the Peruvian will entreat you, "but tell of our natural resources: of what we can offer to Capital and Emigration." He will often add a corollary of regret that the Anglo-Saxon had not been the "Conquistador" instead of the Spaniard; and truly, upon reflection it is a regret which expresses a truth. Whether the Inca civilisation would have bequeathed something which might have been perpetuated and developed by a more practical and tolerant race than the Spaniards leaves little room for doubt; but one thing is certain, that the unspeakable acts of Pizarro and his

uneducated companions not only stamped it completely out, but left behind them a legacy of the defects of their race and status which centuries have not served, and will not serve, to extirpate. They committed an outrage against Nature, and, like all such violations, it has borne a bitter fruit. They and their race spoilt the development of a continent which, when it arrives some day to overcome the defects it has started with, will have done so in great part, it is more than probable, by the co-operation of Anglo-Saxon nations.

But let us turn from these considerations and examine the physical aspect of this vast region. Let us ascend and cross the huge Cordillera of the Andes, the father of the country; for the Andes is its source of life, the *raison d'être* of its being.

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THE ANDES AND THE AMAZON

CHAPTER I

INTRODUCTION

SPANISH-AMERICAN Republics are generally vaguely thought of in Europe as small communities with an incipient civilisation and endless revolutions, where all soldiers are "generals," and all citizens government employees. And there has really been some foundation for this view, especially among some of the lesser States of those fertile regions. But there are other and more favourable conditions underlying these communities; conditions which are comparatively little known to the outside world, and which are worthy of serious consideration.

The foundation for the elements of greatness of a nation—after the weighty matter of race character—depends upon the geographical conditions of its soil. There is a certain condition of "geographical continuity," if I may invent the term, which should be characteristic of the territory of a great nation. This term involves a feeling of amplitude and extension; of unconfined frontiers, bordering upon public or international highways, such as oceans or vast rivers—the possibility of ingress and egress at more than one side.

Peru has this condition of "geographical continuity" in a marked manner, in that whilst possessing a vast littoral and interior dominion upon the Pacific side, she stretches across the Andes, and also has her natural outlet upon the system of Amazonian rivers towards

the Atlantic. She is, in a sense, a trans-continental State.

Peru, almost alone of her neighbours in South America, possesses this characteristic. If she consisted only of a strip of coast-zone between the Andes and the sea, such as is Chile, she would have a much less important future. Brazil, with her vast area of territory, has no outlet or dominion on the Pacific. Bolivia is entirely surrounded by the territories of other States since her Pacific seaport of Antofagasta was taken by Chile, although she still enjoys a portion of navigable waters of the affluents of the Amazon. Ecuador borders only upon the Pacific, although the result of the arbitration of her dispute with Peru may allot her a strip of territory which includes navigable arms of the Marañon, so giving access to the main stream of the Amazon. Colombia alone fronts upon two oceans — the Pacific and the Caribbean Sea; but she has lost the sovereignty of the isthmus of Panama. Venezuela is a country without communication upon the Pacific or the Amazon; her interests are upon the Caribbean Sea and the Orinoco.

The geographical situation of Peru is, then, favourable to future development, and it is only a question of time before the tide of human activity sets that way. Let us consider some of the physical features of the country.

The Pacific coast-line of Peru is about 1,400 miles in length, from its boundary in the north with Ecuador, to that in the south with Chile; that is, from Santa Rosa to the valley of Camarones. Its northernmost coast point is near latitude 3° south, and its southernmost near latitude 18° south. As to its longitude it lies between 62° and 81° west of Greenwich.[1] It is to be recollected that South America as a whole is almost totally east of North America; and Lima, the capital of Peru, is east of the capital of the United States—Washington.

Along this coast-line there are many harbours and ports, whence produce is shipped and goods disembarked. Some of these are splendid harbours, especially Callao,

[1] The Eastern frontiers are in dispute.

Chimbote, and Payta. Others are only open roadsteads, where landing is often difficult, as Eten, Salavery, Mollendo, etc.

The rivers of Peru are very varied in their characteristics. Those descending to the coast-zone of the Pacific are only important as sources of water for irrigation purposes. They are not navigable, as their trajectories are short and steep: the only exceptions being those of Tumbez and Chira, for small launches or canoes. On the eastern side of the Andes a very different condition obtains, however, and within the territory belonging to Peru there are from 10,000 to 20,000 miles[1] of navigable streams and rivers—the Amazon and its affluents, as later described. There are three regions of navigation belonging to the country. First, the 1,400 miles of "silent highway" upon her coast, the Pacific Ocean; second, upon that vast inland sea—the most remarkable lake in the world, in some respects—Lake Titicaca, which is 165 miles long and an average of 63 miles broad, 12,370 feet above the level of the sea; and third, the waterways of the Amazon, which penetrate through the vast territory of the Montaña. There is, of course, no communication by water between these three systems, but the coast and the lake are united by the Arequipa railway, whilst the river system is yet unconnected in any way with the ocean ports except by mule trail, the principal of which is the central, or Pichis road.

The area of Peru is given as 701,600 square miles, but this includes the zone in dispute and arbitration with Ecuador, to the north. This country, therefore, which is usually looked upon in England as a small, remote spot on the west coast of South America, generally coloured green, is about thirteen times the size of England and Wales.

Peru is a country of large things. It has one of the greatest mountain ranges in the world—the Andes. It has the longest river system—the Amazon and its affluents —and the most extensive forests. It has some of the

[1] According to season.

highest peaks on the globe, and many of its mineral deposits are, of their kind, the largest in the world. From all this greatness of nature, shall not there spring some day greatness of man—a leader of nations of her race and in her hemisphere? Time will show. Her children have a magnificent heritage, and they are working now towards the time when it shall no longer be said of them, as it might, indeed, have been written of all Spanish-America, "Unstable as water; thou shalt not excel!"

The country is worthy of a wider and better reputation than it possesses. Its inhabitants have had many difficulties to struggle against—difficulties of race, of inherited defects and characteristics from their Spanish ancestors; difficulties of topography and of geography; and difficulties of border feuds and of rapacious neighbours. They are striving to carry forward the principles of Western civilisation in a vast and difficult area of a little-known continent, and they are worthy of help and encouragement from richer and more advanced nations.

I have touched somewhat upon the climate and products of the country, and the very diversified character of the different zones into which the republic is divided by its physical formation. The vast chain of the Andes, which I have termed the father of the country, positively divides Peru into two regions of entirely different character, and, except in one case, it is impossible to pass from one to the other without ascending and crossing this vast range, at an altitude of 13,000 to 14,000 feet. This great difference of climate, and therefore of vegetation, is due to the fact that the whole of the coast-zone from the south of Ecuador down to, and including much of, Chile, is a region practically without rainfall.

To what is this phenomenon due? It is explained by two causes. The first is that the high chain of the Andes intercepts the prevailing wind, which blows from Africa and the Atlantic, and across the plains and forests of South America itself, intercepting the moisture with which this is laden, depositing it in the form of snow upon the

summits. Secondly, the cool current flowing up the Pacific coast of South America, from south to north, known as the Humboldt current, and which, being lower in temperature than the air and the sea, prevents the evaporation of the latter. This current flows at a rate of about 10 miles an hour, and is from 20 to 40 leagues in width; and it gives rise to the relatively cool and equable temperature of the coast-zone, and is also the cause of the heavy mist upon the coast, known as *Camanchaca*, which prevails at intervals from December to May, and which permits the existence of natural pasture on the foothills.

I have spent long periods in observing the coast of Peru, from the decks of the comfortable steamers that ply up and down, and which are the only means of communication from one port to another. And I have ridden along it for days on horseback—days of azure sky and ocean, of yellow sands and lapping waves upon that junction where land and water unceasingly struggle for mastery: a solitude unbroken by any human element, except the occasional Indian fisher with his net.

What a fascination there is in those journeys! Alone, except for my *arriero* and servant, generally far behind me on their respective beasts, driving the straying pack-mule with my baggage. Alone with those glorious expanses of Nature in that remote region, studying that open book, whose pages, one by one, she presents to the observer. What landscape studies in geology are laid bare there! Here are the underlying plutonic rocks of the very foundation of the continent, polished by the waves and sand; here are masses of strange conglomerate, looking like some Titanic work of concrete; here are strange wind-laid strata of sand, forming cornices and entablatures along the summits of low cliffs; and curious caves, worn by the ceaseless action of wave and wind-blown sand.

From time to time I pass rocky promontories where the trail necessarily winds upwards from the beach to surmount them, and I look down where the rollers break below. Small rocky points of islands arise just beyond,

covered with myriad sea-fowl—those manufacturers of the coveted phosphates—the "guano," of commerce.

Of so much wealth in past years, and of such evil reputation has been this product, such fortunes made, such reputations ruined, that the very word conveys an evil odour! One thinks of bribed Senators, fraudulent shipments, and ill-gotten gains squandered in Parisian delights!

The trail winds on, and the sea-front is for a moment hidden by sand-dunes, and suddenly upon my ear there falls a continuous bleating as of sheep in distress. I look around to discover them. "Where are the sheep?" I ask my native servant in surprise, as he rides up, for the sandy wastes show no single blade of herbage. "They are not sheep, Señor," he replies. "They are *lobos del mar* (sea wolves)"; and, sure enough, on emerging from the sand-dunes, I behold hundreds of seals upon a rocky promontory below, where the waves beat ceaselessly.

Further on my horse stumbles over some object half buried in the sand. It is a whale-bone, fully 14 feet in length, and here and there are the enormous frontal bones of these great mammals, thrown up heaven knows how long ago. It is easy riding along the very verge of the ocean—the sand is wet, and the horse's hoofs leave a bare impression. Higher up it is more difficult, and the animal sinks deep in the loose, dry sand. Here, also, are the curious travelling sand-dunes which one finds in these places, known in Spanish as *Médanos*, and which I have described elsewhere.

The Pacific coast of South America is at first sight disappointing, perhaps because the traveller has expected to find a region covered with tropical vegetation, forgetting that in a rainless zone nothing grows except under irrigation. Interminable barren stretches of sandy precipices, monotonous in the little-broken line of sea-front, present themselves to the eye when beheld from the steamer's deck, and rocky promontories, washed by the waves. The whole coast-zone, the relatively narrow strip between the ocean and the Andes, seems to be largely a residue or

after-formation of the latter, with which the sea constantly disputes dominion. It presents in places a sharply cut-off face of unstable sandy soil, and, far beyond, the foothills of the Andes arise; whilst behind there is the faint grey, serrated edge and mass of the main range, topped at times by the far-off white point of a snow-capped peak.

But there are, nevertheless, numerous bays; unsheltered often, where the coast-line is broken away by some descending river, giving rise to a fertile plain, a town, irrigated plantations of cane and cotton, and the conditions necessary for the life of man. The steamer has anchored off such a port. A long mole stretches out beyond the succeeding lines of breakers, but not far enough into deep water for the steamers to go alongside. Huge launches, which have laid at anchor all night awaiting the steamer's advent, now toil out towards us. They are loaded with bales of cotton, or sacks of sugar; often they contain bags of ores—gold, silver, and copper, from the mines of that far-off Cordillera—or bars of bullion; and the four or five rowers stand in the prow bending the long sweeps in their movement of the heavy mass they are slowly urging forward. Behold these sons of toil! They are generally a mixture of the negro and the *Cholo*, or Peruvian-Indian, and they bear the imprint of their low caste upon their countenances. Yet life is not hard for them, except on steamer days, and they may take their fill of sunshine; whilst empty bellies are more easily filled in tropical ports, where a handful of bananas may be begged, or stolen from the cargo—more easily than in the more civilised poverty of Britain or North America, where starvation is less picturesque and more frequent!

But the steamer's siren blows. The dilatory captain of the port, in his gold-laced uniform, disturbed from his siesta, comes forth at length from the shore with the ship's papers; what time the skipper, tramping his quarter-deck, sends forth strange Anglo-Saxon oaths whose condemnation includes, for the time being, everything connected with Spanish America, geographically and ethnologically! The rattle of the engine-room bell sounds "stand by"; up

comes the iron-linked cable from the bottom of the bay; the shore recedes, and the freshening breeze succeeds the warm air of the land. The waves lap upon the prow and hull of the steamer in motion again, as I turn to contemplate and meditate.

The sea is always a silent and mournful watcher of human effort, that is if Nature in any of her elements takes any note of humanity at all, which is doubtful. The long-drawn moan of recurring wave-swells thrown off in monotonous succession from the steamer's prow seems to speak, at times, of the inevitable and hopeless strife and work of man. This changeless and impressionless sea! The keels of a myriad barques have ploughed it, and left their momentary wake thereon—for as long as the following seagull could pursue it. Here the keel of Drake, such centuries ago, scurried in harryings of gold-laden galleons; and gold, and galleons, and crew have left no ripple but in the minds of men. The voice of the sea seems often that of an unfeeling monster; its hollow wave-echoes upon the shore seem soulless, its briny foam a protest flung against stable matter and sentient man!

Yet how strange a glamour hangs over the tales of the sea, of old! What fascination enshrouds the old vessels of the past! Think of their gleaming sails; their trim hulls, as they came up over the edge of the world; their captains, their crews; the smells, the oaths, the battling with wind and tide, the long reaches against billow and adverse gale, all toward some distant port, longed for until reached, and left again with rejoicing! The poor and hard-worked crew with their miserable rations, blistered hands, and brutality; striving, as man will ever strive, for mirth and profit. Away, away they went; on, on they toiled, beating beneath tropic skies far from their homes; thrashing through seething seas —for what? For a wretched pittance of gain! Then to disperse, or go down, lost and forgotten as the years roll on, buried in the misty halo of the past, leaving no trace upon that soulless medium whereon they lived and moved and had their being. And the silent sea, blue,

or grey, or angry, or reposeful, brims full and impressionless as then, as now, and as shall be for all time!

Ha! but what is this? A long Pacific roller, born in mid-ocean, or on the shores of China or Australia, 5,000 or 6,000 miles away, shakes the steamer from stem to stern. She rises to it, and throws a fringe of foam away on either hand, some of which soars upwards on the freshening breeze and is flung into my face sharply, and I taste the brine upon my lips. The sea protests; she is not soulless, she seems to say. Rather, she bears us on—as she bore our fathers, and shall bear our sons—on towards new horizons of hope and knowledge; on to fresh fields of action and accomplishment!

CHAPTER II

THE ANDES

HEAVENWARD thrown, crumpled, folded, ridged and fractured, with gleaming "porcelain" gnomons pointing to the sun; shattered strata and sheer crevasse; far terraces and grim escarpments, hung over with filmy mist-veils, and robed with the white clothing of crystallised rains and mists; the birthplace of the winds and hails; the father of the rivers whose floods are borne a thousand leagues away — the mighty Cordillera is! From north-west to south-east, a wall 3,000 miles in length, dividing the Pacific world from the boundless empire plains of Amazonas and the east, it crouches, rears, and groans upon the western sea-board of the Continent. Kissing the cerulean space with snowy peaks, five miles above the level of the ocean's ebb and flow, and groaning over its dun and desert wastes below, with earthquake grumbles, the ponderous mass, from rock-ribbed base to filmy summit-edge, where matter ends, keeps its eternal vigil! Mineral-loined, and girt with silver, gold, and cinnabar, abides this mighty banker of the sunset world! The beautiful Andes; the terrible Andes; the life-giving Andes; the death-dealing Andes! For the Andes are of many moods, and whatever change of adjectives the traveller may ring, he will fail of truly describing them.

When the delicate tints of early morning shine on the crested snow away on either hand in rarest beauty, and the light and tonic air invigorates both man and horse, and the leagues pass swiftly by, there is joy on the face of Nature, which enters into the traveller's being.

When the snow clouds gather and the icy breeze and pelting rain beat mercilessly upon him throughout an entire day: night approaches, and there is no shelter for rider or beast: then does the weight of weariness and melancholy descend upon him. Twelve times have I crossed these summits, and rarely did the snow, and sleet, and hail, and rain, and other cosmic matters fail to come out of the horizon what time I passed.

But the early morning is exceedingly beautiful. It is inspiring to those minds open to such influences. The bright sun and blue sky, the glorious light and shadow on the tree-filled valleys and canyons beneath are enchanting with their silent and uninhabited panorama. The white mist-sea is far below, but it is rising. It rolls against the grim and ancient rock-escarpments caressingly; wisps, separated from the main bulk, float like thin white veils in horizontally-flung lines across the façades of the precipices, or move slowly upward, impelled by some faint air-current. But the sun is getting higher, and the whole mist-sea is ascending; mark how it engulfs the ridges and peaks with its appalling crests! Huge foam-billows menacingly breast the hills; they rise and break like sea-waves against the obstruction. The milky line is sharply defined against the blue sky beyond—a moment, when the mist-sea is flung upwards, is dispersed in a thousand directions: fills the whole horizon, and covers the glowing sun-ball. A chill creeps over all, until, faint, thin, and evaporated, that seemingly irresistible ocean of unstable vapour has vanished in accordance with the laws it obeys. The sun emerges again, and makes glad the faces and the depths of the frowning Cordillera.

There is nothing more remarkable in the Andes than these mist effects. The most curious and weird transformation scenes take place, at morning and at evening. Now the sun has set. It still tinges the western sky with its beauteous but indescribable tints. The palest saffron fades into the pearly green of the zenith, and the last and orange rays, calm and cold, flash faintly and expiringly upwards. In and among the deep canyons

of the stern and purple-green hills below, the fleecy cloud-masses of pearly vapour slowly pour, filling them with impalpable lakes, so soft, so pure, they seem the essence of the elements, nightly spread for the couch of some unseen god-traveller. No eye but mine beholds these rare stupendous beauties. My Indians, busied over their camp fire, do not note them, and my companions doze within the tent. Below, wrapped in the sombre veil of night, are those steeps, ways, and canyons I have passed, those precipices and trails I scaled, and traversed yesterday, which lead from the far, mysterious *Montaña*. Now they are covered with the fleecy mist-masses, which some evening breeze is urging upwards. Appalling masses, which break over dim, distant peaks like awful billows. They rise slowly, surely, terribly, as if to engulf me even on the high point whereon I stand. But night is at hand, and even as they rise they are covered with its sleepy pall. A single and glorious jewelled planet has dominated the eastern escarpment and gleams softly down upon me. Rest!

I have said that the Andes is the father of Peru, the origin of all the country possesses, and this fact cannot fail to be impressed upon the traveller. The strong influence which topographical conditions exercise upon a people is here exemplified. The climate, which moulds to so considerable an extent the characteristics of races, is governed altogether by the existence of the Andes. The sterile and rainless region of the coast owes its condition largely to the interposition of the mountains between the easterly winds and the Pacific Ocean. The moisture, instead of descending upon this zone, is intercepted at the summit and forms the snow-cap, and gives rise to the constant rain-storms of those altitudes. Due to this circumstance the physical characteristics of the Peruvians who inhabit these higher regions differ from those of the dwellers on the coast, as elsewhere described. These differences are evident not only in physical, but also in sentimental matters, and Peru is still practically two countries divided from each other by the vast wall of the Andes.

The natural resources of the country—and they are limitless — are due to the Andes. The great diversity and extension of the mineral deposits, such as iron, coal, copper, lead, silver, gold, quicksilver and all the metals known to commerce, are a result of the geological changes which have taken place in the formation of the chain. The varying temperatures of the various regions of the country are due to the vast differences of altitude occasioned by these mountains, and which give rise to the existence of such diversity of species in the vegetable world. On the barren coast-zone of the Pacific side life is only possible from the cultivation produced in the valleys under irrigation from the streams which descend from above, so that as far as their water supply is concerned the Andes have in the first instance intercepted it and then afforded it.

The topographical formation and the structure of the Andes is remarkable and interesting. The system consists principally of two parallel chains, one generally known as the Occidental or coast Cordillera, the other as the Oriental Cordillera, which in places is known as the "white" Cordillera, or "Cordillera Blanca," due to its snow-cap. These two ranges are joined in places by *nudos* or "knots," or transverse connections, four in number, and known respectively as — the knot of Vilcanota, near Cuzco; the knot of Cerro de Pasco, the knot of Loja, and the knot of Pasto: the two last being out of Peru, beyond its northern boundary. Between these connections exist a series of longitudinal valleys or basins of immense extent. The southernmost of these is the lake-basin of Titicaca, bounded on the north by Vilcanota, and at the south terminating in the pampas of Bolivia; next in the series, going north-westerly, is the river-basin of the Ucayali—that great waterway which at its junction with the Marañon forms the mighty Amazon. North of the Cerro de Pasco "knot" are such basins as that of the valley of Huaylas, and the upper Marañon.

Except in one place (Huarmarca), the traveller cannot pass the Peruvian Andes at a less height than about

13,000 or 14,000 feet above sea-level; for the passes of the Cordillera reach invariably that altitude. Of the two railways which cross the summit, that of the Oroya, or Central, rises to 15,642 feet; and that of the Southern Railway, beyond Arequipa, to 14,666 feet. The highest peaks of the Coast Cordillera rise to 16,500 feet, but the phenomenon is observed that their summits are free from perpetual snow, notwithstanding that they are above the line of perpetual snow of the main parallel chain. The highest peaks on the Cordillera Blanca ascend to more than 22,000 feet, and among them are the highest in the whole of America, North or South. Indeed, one of them—Sorata, with its 23,600 feet altitude—is stated to be the third highest peak on the globe. I have elsewhere described some of the snow-capped ranges and peaks, some of which I have ascended. They are in many cases indescribably beautiful and imposing, and their imprint, perhaps, never fades entirely from the mind of the traveller who has sojourned among them.

Among geologists it is held that the western, or Coast Cordillera, is the oldest; and the eastern the later formation. The whole is an upheaval of the plutonic rocks: granite, porphyry, diorite, basalts, etc., crowned by enormous areas of sedimentary and metamorphosed rocks and conglomerates, as limestones, slates, quartzites, etc. In some places, as, for instance, around Arequipa, are vast extensions of volcanic tufas, and terrible and barren wastes of contorted *débris*, without water, herbage, or life. The railway which descends from the Peruvian and Bolivian *punas* or plateau of the Titicaca basin to the fertile valley of Arequipa, winds for an entire day's travel, with rapid grades and sharp curves, among these appalling heaps of Nature's escoria of a bygone age.

So broken is the country, and so steep the descent, that the trajectory of this railway is remarkable, and the traveller has his eyes for hours upon the volcano of the Misti, which is close to Arequipa, but which, first on one side, and then the other, of his line of direction, seems almost to be elusive, and to recede as the train advances.

As to the Oroya railway the altitude is dominated by a series of interminable loops and zigzags up the slopes, whereby the train, travelling alternately in opposite directions, at length gains the summit of the Cordillera.

But the traveller in Peru journeys far away, generally, from the lines of the railways. His road from the seaport, in the saddle, lies over the most diverse and marked geological formations, and as the coast-zone, the uplands, and the Cordillera are free from dense vegetation, generally, these changes are displayed to the eye. The enormous areas, at the higher levels, of granite, quartzite, slate, and limestone are the birthplace of great wealth in metalliferous minerals, as gold, silver, copper, lead, etc., and enclose in their strata innumerable seams of anthracite and other classes of coal, such as in the future will form one of the country's most valuable assets. I have seen coal strata of many feet in width standing vertically within their enclosing rock walls, and towering upwards for distances of thousands of feet. No Engineer who has travelled in Peru can fail to appreciate the variety and extent of the country's mineral resources, and all this prodigality of wealth has for the author of its being this vast and little-travelled Cordillera.

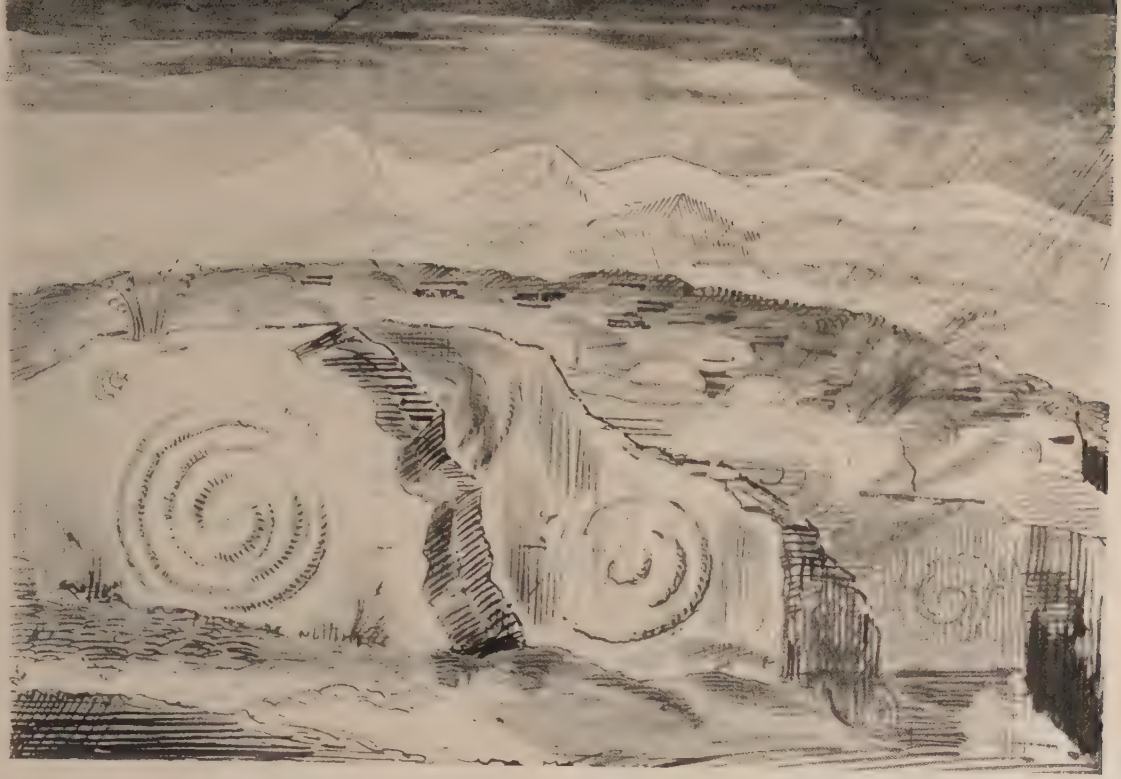
The Andes, like all great and portentous matters, whether physical or abstract, dawns slowly upon the observer's mind, if I may use the term. The traveller, as he slowly approaches from the coast, obtains no *coup d'œil* whereby he might dominate its beauty and extent as a whole. The Queen of the snow-summits does not so easily display her charms, but only from time to time permits the weary horseman, toiling over the sunburnt plains, glimpses of her virgin towers above. Between the prosaic hills of the lower altitudes the snow-capped peaks at times appear, so white and dazzling that they might be close beyond—an hour's ride, no more. But nothing is more deceptive. Ordinary ideas of distance are set at naught, and only days of riding will bring the traveller up to them. But when he shall have braved the tempest and the steeps; when his slow and panting beast, *soroche-*

stricken, has overcome the last few rising steps upon the trail that tops the summit of the western range, then as the dark horizon of the foreground rocks gives place his astonished gaze rests on that glorious range of white-clothed sentinels beyond. There they mark the eras; there they stand, performing their silent work; and there, when evening falls, it tints their brows with orange and with carmine, and wraps their bases in the purple pall of finished day. The lurid sun has set upon the escarpments of an unfinished world!

Some time since the Jurassic or Silurian ages arose these mighty guardians of the western shore, carrying some ocean-bed from where it lay, and bore it upward three miles and more towards the clouds. Strange creatures of the deep:

"Dragons of the prime,"

which had their being within its ooze in those long ages past, now stand in rigid schools upon the stiffened summits. Huge ammonites and cephalopods, whose petrified scrolls and fossil circles catch the traveller's eye as his weary mule stumbles over the limestone strata; and, blurred by the eternal pelting rain, and loosened from the stony grasp by frosts and sun, they, together with the rock-ribbed walls which enclose them, are again dissolving into particles: a phase within the endless sequences of Nature's work; an accident of her ceaseless and inexplicable operations!



FOSSIL AMMONITES IN THE ANDES 14,800 FT. ABOVE SEA-LEVEL.
Sketched on the spot by the Author.

Face p. 16.

CHAPTER III

PERUVIAN TRAVEL

WHAT, it may be asked, are the objects with which travellers would traverse these hot deserts, these high and snow-capped Cordilleras, cross and ascend these wind-swept steppes and *altiplanicies*, or penetrate these vast and uninhabited regions of the Peruvian and Amazonian forests? Some well-defined object must take him there, for no ordinary tourist, on mild distraction bent, is likely to brave the rigours and difficulties which at every turn present themselves. It is the Engineer, that pioneer of civilisation, with the stimulus of his scientific-commercial errand; the explorer, the archæologist, the botanist who principally have travelled through these fastnesses and labyrinths. The hunter, of course, finds fairly abundant quarry; and the artist, the painter, could find among the snowy beauties and the azure lakes of the Cordillera, the rare and marvellous mist-effects, and the wondrous sunset skies, material such as might immortalise him.

But it is Nature and her resources that will be the object of his journey, be he whom he may, for of modern man there is not much to attract. That is, there is no flash and glow as of Eastern worlds; no galleries, statues, or palaces; no gardens of delight, and no alluring bowers of pleasure. Nature is in a sombre mood in this her vast workshop of the Western world; and even at times it seems that she is offended, as if the place were not yet prepared for man's habitation, and she looked upon him as an interloper!

Indeed, it has sometimes occurred to me, as I wearily approached the end of some hard day's ride, that Peru (as also other parts of the New World) is still in the making: not yet ready for man; and that Nature seems to protest in that her laboratory was invaded before her handiwork was perfected.

A barren shore, rainless and ugly; hot, burning plains; narrow V-shaped valleys where a little cultivation struggles to retain a foothold. Bleak and sterile uplands where the dreaded *soroche* weakens the venturesome traveller, and appalling peaks crowned with unconquerable snows and endless glaciers!

Nature protests. She required a short span of some few million years to round those grim escarpments; to fill in those valley floors, and form her fertile plains; to lower those towering Andean crests, and let the Amazonian dews over to form a gentle rain upon the western slopes: in short, to put her finishing touches upon it. But man, restless and exploring, has invaded the workshop, and now he must assist in the work.

To return, then, to the traveller, and the means he must employ in his journeyings. The railways of Peru, as before stated, will bear him across the Andes at two different points, distant from each other several hundred miles. But his impressions of travel will not be from these means of conveyance, fine examples of the work of the Engineer as they are. His way will be over rough trails, and his seat will be the saddle.

As regards the conditions of horse and mule transportation in the interior, the experience of the traveller resolves itself into certain recollections which crystallise themselves into aphorisms. One of these is that, "The principal food of saddle-animals in Peru is the spur"! and another that, "If there existed in Peru a Society for the prevention of cruelty to animals, all the owners of pack-mules would be taken to prison"!

At any rate, I have found these two notes several times inscribed in my note-books, although they need not be taken too literally. It is not that the people are inten-

tionally cruel, but they are not rich, generally, and the unfortunate beasts have to yield up their last iota of service, and to work in places often where fodder is scarce and expensive.

On looking back over notes made during long journeys in the interior, I find expressions of opinion which certainly described the circumstances of the moment, but which might seem harsh when applied generally. There is an anecdote in Peru about an Englishman who happened to go out into the street after lunch, at the moment when a policeman was killing a mad dog. This observant Briton, according to the story, having looked at his watch, took out his note-book and inscribed therein :

"In Peru, at 2 P.M., it is customary for the police to kill dogs"!

This is supposed to be a warning against hasty generalisations.

Much to the amusement of a Peruvian friend, at whose house I was staying, was the following generalisation of a similar nature, which I read him from my note-book :

"In Peru, Indian women who sell guinea-pigs, steal penknives"!

For, a few days previously, a Chola girl had entered my room to sell me a *cui*, or guinea-pig, which animals form a considerable article of food in little interior villages. I bought the *cui*, but after the woman had left I turned round to where my knife had been lying upon the table. It was gone also!

In making expeditions through the country, extending over weeks or months, the traveller has to employ one of two methods : either to depend upon hiring animals at the different points, or purchasing his beasts outright before starting. Employing the first, it is advisable to carry letters of introduction to the various *Gobernadores*, or petty authorities, of the towns and villages *en route*. In this manner the traveller is passed on from one point to the other, often with much delay, due to the difficulty

of getting animals even under the autocratic mandates of the gobernador.

The following scene generally takes place. The traveller arrives and presents his letter to the gobernador, which is perhaps from the functionary of the last town. It is duly read, and the gobernador "places his house and his services entirely at your disposal."

This polite formula being gone through—and it is not to be supposed that it is meaningless, for the gobernador generally does all in his power to further your efforts, especially if you are a foreigner and bent upon some scientific or exploratory work—he calls the *Alcaldes*. These individuals are generally Indians; in fact, in many places I have visited the gobernador has been the only person who could speak Spanish. The alcaldes arrive. They carry, as insignia of their office, white or black wands, generally ornamented with silver mountings, and of which they are very proud. A conversation in Quechua takes place between them, and they depart, and the gobernador informs me that horses will be forthcoming to-morrow. It is a mandate which has been issued, and on the following day various unwilling Indians arrive, ushered in by the alcaldes, and leading various kinds of beasts in all conditions of age or decrepitude. The gobernador eyes them wrathfully; none of them are fit for the saddle. Fresh orders are issued to the alcaldes, who again depart accompanied by the Indians and their sorry brutes. The day is lost. "To-morrow, Señor, without fail, there will be animals," the gobernador assures me, and he takes me in to "breakfast."

It would not arouse the appetite of the reader to describe this meal. The food is of a primitive nature, generally consisting of soup made of potatoes and dried cod-fish, followed by boiled meat of the consistency of india-rubber. Often there is no bread, but *cancha*, or toasted maize, is eaten as a substitute.

The morrow arrives; six o'clock, eight o'clock comes, for the impatient traveller has risen early and paces up

P. 20. TYPICAL VILLAGE OF THE ANDES.

and down, cursing the dilatoriness of the alcaldes—for there is no sign of horse, mule, or Indians. Nine o'clock, and the distance to the next point is fully ten leagues, over broken ground, and nine hours' ride.

It is winter-time, and to pass the Cordillera the traveller must make an early start in order to cross the summit if he would escape the wrath of the elements, which is poured out after the sun passes the meridian. It is almost useless to start to-day; and as this fact impresses itself upon the traveller's mind, the alcaldes and the rain arrive at the same moment, the former unaccompanied by any specimen of the equine race whatever. Another day is to be lost!

The rain pours down in sheets, and it is cold and uncomfortable. I go in and sit down at the table, a prey to disgust and weariness. And here let me transcribe from notes made at the time, and which do not exaggerate in any respect.

"Down each side of the street, if it may be called such, straggle without intent of order the miserable hovels of the Indian inhabitants; without doors or windows, except that the former are represented by an unclosed aperture. It has been raining all day—it ever rains in the Peruvian Cordillera—and there is mud and filth everywhere. The Indian women pass in and out of their wretched domiciles, heedless that their skirts drag in the black mud they trample upon. They are themselves unwashed and uncombed, stockingless and bootless, yet with a certain pretentious finery about their extraordinarily-shaped hats. The men, who have passed the day doing nothing—their usual occupation—congregate, now that evening falls, in some 'shop,' if the building or hovel, with its petty collection of bad and dear articles, brought at vast expense of carriage from coast ports, may be described as such. The article principally dealt in seems to be alcohol. An Indian woman, old, wrinkled, and filthy, has just entered the shop of the gobernador, where I am, to purchase some of the fiery liquid. Large quantities of this alcohol, which is termed *chacta*, and of 40 degrees of strength, is consumed daily and nightly by the Indians of both sexes. They are brutalised with its effects; they are filthy, bedraggled, cold, wet, ignorant

—perhaps the awful stuff brings them some surcease; although I doubt if they possess the faculty of comparison, and are aware of their condition."

I have been waiting all day, two days, for a beast of some kind: the means of escape from this place. Money has no value here, and although there are both mules and horses about, none of these ignorant and besotted citizens will hire. They are apathetic; they are morally defunct. But as I write I receive notice of the arrival of a horse, produced by repeated orders of the gobernador. I examine it. It consists, like those of the previous day, of a framework of bones, with an awful patch of sores where the flesh upon the backbone should be. It would be kind of me to end its days with a ball from my revolver. The gobernador again appears, and still counsels patience, for I threaten to leave the place on foot and to report to the Government, from whom I have brought a circular letter of recommendation.

The evening closes in, and various individuals arrive, having heard of the presence of an Engineer, bringing samples of gold and copper and other ores belonging to mines of which they state they are the owners, and assuring me that untold wealth awaits me if I will visit them. But nothing can arouse me from the attack of spleen which has come upon me; and informing them of this fact, I seek my cot and turn in.

But salvation is at hand when least expected. In the early hours of the morning—it is still dark—I am awakened by the tramping of animals, and my boy informs me that two excellent mules have arrived in charge of an alcalde, who has, by fair means or foul, obtained them from the owner. I turn over peacefully for another sleep, but am soon afterwards awakened again by further tramping. A suspicion flashes across me—the result of other experiences of a similar nature—and I arise hastily and go out in my pyjamas. It was well I did so, for the owner of the mules has arrived and is stealthily endeavouring to drive them away again.

Patience has been one of the virtues, but now "battle and murder" seem to acquire that quality, and the dire threats I use and the language in which they are expressed are such as it would be impossible to inscribe within these faithful chronicles; but they are effective, and the owner of the animals departs, satisfied in a measure that it is a foreigner who has taken charge of his property. He feels more assured of his pay!

But "the day dawns; the shadows have fled away." I am in the saddle, and the beast beneath me is a good one with a comfortable pace. Have you ever felt that species of contentment, good reader, when all your worldly belongings are packed securely upon two pack-mules who ascend the road in front of you? Your *arriero* cracks his whip and whistles cheerily to his beasts. The air is fresh and exhilarating, and the early sun gleams upon wet herbage and the silver streamlets that rush downwards through the pebbles. Before you is the open country, and the exhilaration of treading *terra incognita* fills your veins.

As before insinuated, you may purchase your beasts at the outset of your journey; and it is often much better to do so, for you are then always sure of them, and know their quality and powers. Also, if you have not been too heavily defrauded in their purchase, you can generally sell them again at little less than what they cost you.

The next difficulty with which the traveller has to contend is that of obtaining fodder: that is, in the higher regions; for the alfalfa, which is (apart from the spur) the principal food of the animals, does not grow above an altitude of about 12,000 feet.

Peru is a country which has the highest inhabited places on the globe. What would be thought in England, for example, of extensive mining operations at an altitude of 15,000 or 17,000 feet above sea-level; higher than the summit of Mont Blanc? Nor is it to be supposed that at such altitudes the climate is unbearably rigorous. Stoves are almost unknown in the houses, and custom renders the inhabitants proof against the cold.

In one of the famous auriferous regions of the south of Peru, which I speak of elsewhere, "hydraulic" mines are working at an altitude of 15,500 feet above sea-level; but, notwithstanding this, the thermometer marks only from 41° to 50° Fahr. in summer, and a minimum of 11° to 14° in winter. Comparing this with the great ranges of temperature of North America, where the thermometer descends below zero, it will be seen that the climate is rather remarkable. At another point in the more northern part of Peru, a productive mine is being worked above the line of perpetual snow, at nearly 17,000 feet; the main tunnel of this mine pierces the snow and ice-cap in order to reach the ore-body. In these places the only fodder obtainable is barley, in grain, or straw, which is grown at a lesser elevation, but which produces no grain within the husks.

Even in those places where alfalfa is produced, it often happens that the owners will not sell. It may be that they have only sufficient in the fields for their own beasts, or that they will not sell simply out of pure "cussedness," to use an Americanism. For the first instinct of the *Chacarero*, or small landholder, is to reply in the negative to everything that is asked him. This is also the principal characteristic of the Indians. The stereotyped reply to all questions, at first, is "*No hay, Señor*" ("There is none, Sir"). (Pronounced "No Aye.")

This has often been dwelt upon in books treating of travel in South America, but loses nothing by being repeated. The weary traveller arrives late at some small group of huts, trusting to buy at least something of sustenance for himself, his men, and his beasts. He rides up to the door, and after half a dozen wretched dogs have been induced to quiet their ferocious altercations, the *Señora* of the place is interrogated:

"Have you any alfalfa?" "*No hay, Señor.*"
"Any barley?" "*No hay, Señor.*"
"Any chickens?" "*No hay, Señor.*"
"Eggs?" "*No hay, Señor.*"
"Meat?" "*No hay, Señor.*" And so on, *ad nauseam.*

In these places there often exist thieves who steal horses or mules at night, and experience has taught me to finish my list of interrogations with one relating to that matter.

"Are there *ladrones* (robbers) here?" To which generally she replies: "*Si hay, Señor*" ("Yes, there are"), adding that it is advisable to *vigilar* the animals all night.

As will be imagined, the sum total of the information extracted is not comforting, but the experienced traveller knows that conditions are not necessarily so black as have appeared. At the termination of the conversation, my method of procedure has been to dismount and light a cigarette, taking care to give one all round to the occupants of the place. By this time they have been able to see that it is a *buena persona* who is with them; that there are no soldiers. Also, my men have at once entered into conversation; confidence is inspired, and ere long, aided by a few small coins paid in advance, alfalfa, chicken, eggs, and whatever else the place may contain, are forthcoming.

I have always endeavoured to leave these poor people more contented when I left than when I arrived. I have tried to remove a little of their *desconfianza*, representing to them that an *inglés* always pays for what he takes. The Englishman who travels has often to bear the weight of his country's errors; it is just that he should at times also shoulder her virtues!

Of course, it must be understood that these remarks refer to small, remote places. At any town where there are people of a higher class, such incidents do not occur, and hospitality is pressed upon one, and pleasant recollections of these people mingle equally in the mind of the traveller with the difficulties he has encountered.

As before intimated, the best method of procedure for an extended expedition is to purchase both saddle and pack animals. Good mules cost from £20 upwards, and fair horses somewhat less. Having done this the traveller will have eliminated the principal source of delay and

trouble. He will, of course, under no circumstances, travel without his own saddle and other equipment; that goes without saying.

In addition to this, and in order to render oneself independent as much as possible of the people of the *No hay* stamp, a tent should be taken, and a certain amount of provisions. I have followed this system with much comfort. Whenever the night overtook me I had the tent planted; there was no straining to reach stated stopping-places, and the only absolute requirements were forage and water. As regards these, except on the coast deserts, there is generally grass, which forms good feed for the animals for a while; and by taking the precaution to give them alfalfa or barley when it is possible, the traveller may journey, in this way, with facility. As to water, this exists everywhere, except in places on the coast-zone—the rainless region; and the camp must be pitched where water is. Even there, distances are comparatively short, or easily comprised within one day's journey.

The equipment and *personnel* which I have carried on some of my expeditions was as follows:

Imprimis, myself, mounted upon the best mule I have been able to obtain. Mules are preferable, especially when travelling in the Cordillera region and uplands. They stand the hardships of precarious fodder and rough weather better than horses; they are more sure-footed—a desirable quality on precipitous trails—and they do not suffer nearly as much from the *soroche*, due to the altitude. As regards saddles, there are none better or more comfortable for these journeys than those made in Lima. An English saddle should never be used; it is quite unsuitable.

Secondly, the *arriero*, or mule driver, whose duty it is to keep his animals going as fast as time requires, or circumstances permit. Two pack-mules have generally been sufficient, and they carry 200 to 300 lbs. each. Their load consists of the tent, my folding-cot and blankets, the cooking utensils and the store of provisions,

and a small portmanteau with my clothes and the few necessary books and other articles. On return journeys mineral samples have brought the load up to its maximum, or required the hiring of an additional animal.

Thirdly, my "boy," who may or may not be a youth, but whose duties consist in doing everything that may be necessary. Often I added a native miner, if the expedition was a prospecting one.

Both men are generally mounted, although in some places the Indian *arrieros* go on foot. This, however, means slower movement, as the march of the party is regulated by the pace of its slowest member. There are, therefore, at least five animals to secure fodder for; and this question of fodder is the first one that presents and has to be dealt with.

On arriving at a predetermined point at the close of day, if the inhabitants are absolutely and obdurately of the *No hay* type, which I have previously described; or if, as often happens, there is no fodder grown at all in the place, the animals must be turned out on to the natural pasture. This is sometimes good, and at others exceedingly poor and sparse, and the animals suffer accordingly. They must be hobbled, or tied by the "hands," as in Spanish the fore-feet of beasts are termed. If there are thieves about, watch must be kept all night; the men taking turns at doing this.

In some situations the amiable and diplomatic method before described for securing sustenance for man and beast are useless, and the traveller must resort to more resolute methods. During one journey in the interior I almost starved, as the people would absolutely give nothing; and I was obliged to burst open the door of a hut and forcibly appropriate a basket of eggs, leaving its value in the hands of its protesting owner.

As regards habitation on these journeyings the tent is generally sufficient, although in the rainy season, when it is expected to remain some days at a certain given point, it is advisable to hire an empty house, and usually such is to be found in the villages.

In a village on the upper Marañon I stayed for some weeks in a thatched adobe house on the banks of the river, and retain certain recollections of my "tenancy." I hired the place at the not exorbitant rental of twenty cents per week, which amount I handed to the owner on receiving the key. I had just had it well swept out, my baggage installed and travelling cot put up, and was enjoying a cigarette in full possession of the premises, when a wrathful *Señora* appeared, asking my servant by what right I was there. As he seemed to be treating her with scant ceremony I bid him explain, when it transpired that she laid claim to the ownership of the place, saying that the person to whom I paid the rent was an impostor, who had absolutely no right to the house at all. Weary, at length, of the voluble arguments of the woman, who went back into the remote history of the village to prove her claim, I hit upon the simple method of getting rid of her by paying her the amount of the rent, the disputed twenty cents in full, but I took the precaution to obtain a receipt this time. The dame having departed with profuse thanks for my generosity, as she styled it, I again lay back in my cot, and was just falling into a siesta, lulled by the murmur of the river and the midday drone of insects outside the open door, when more wrathful voices aroused me. Behold! three other women and a man were laying claim to the house and its corresponding rent, and were only prevented from entering by the knowledge that the *patron* was asleep within, as my men informed them, and sleep is much respected among these people.

This was really too much, and I sent my boy for the Gobernador. "*Ah! indios, picaros, brutos!*" exclaimed this worthy, when he had been informed of the matter; and he threatened to have all the rival claimants forthwith reduced to prison. After much sifting of evidence, however, it appeared that the last claimants, the man and his three cousins, held probably the most likely right to title; and to get rid of the whole affair I again produced a twenty-cent coin, and deposited it temporarily

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in the keeping of the Gobernador, until such time as a judicial decision on his part should be arrived at. Such is the tricky nature of these poor people.

Like most people of whatever society or status, these Peruvian natives are much won over by ordinary justice. It is the case a good deal among the petty authorities, and sometimes of the landholders, to employ the Cholos, and fail to remunerate them according to contract. From this, largely, arises their lack of confidence, and unwillingness to work. On several occasions, when I have paid them for work done, at the close of the day, I have heard them informing each other with surprise that they have been paid; their wages, in current silver coin, had positively been handed to them, without rebate, fines, or procrastination. "Look!" they have exclaimed. "This gentleman has paid us; here is the money!" And the next day, instead of a scarcity of labour, I found a surplus.

As regards their ideas of honesty, I do not think they consider it wrong to steal, only to be found out. They are generally timid, even in their thefts, as the following will show. I left the house one morning with the door open, and with four hundred silver *sols*, or dollars, on the table in four piles of one hundred each. On returning, I observed a Cholo emerging from the house, and seeing me, he fled away. My suspicions were aroused, and counting the money, I found four dollars missing, one from the top of each pile! The man might as easily have taken the whole amount, but he feared to do so.

This particular house affords me yet another incident. Wishing to foment habits of cleanliness and decency among my men, I had, upon leaving, given orders to have the place thoroughly swept out and cleared of the litter of departure of my men and baggage, and went on ahead. When the *arriero* and my servant joined me I enquired if my instructions had been carried out, and saw by their answers that such had not been the case. Forthwith I ordered a right-about-turn—we were already some fifteen minutes on our journey—and the village

was shortly astonished at our rearrival. I set the men to work, and had the place left in thorough order in less than half an hour, whilst the villagers crowded around wonderingly. "Know," I said grandiloquently, as having mounted again I turned and addressed them, "that an Englishman always leaves a house cleaner when he goes away than when he entered it!"

CHAPTER IV

PERUVIAN TRAVEL—*Continued*

On one of my expeditions I formed a camp in the mountains in order to make a thorough examination of a group of gold mines, which had been worked centuries ago, and abandoned.

There is much of pleasure in this temporary dwelling entirely away from the haunts of man. Imagine this canvas habitation, kind reader, the surrounding amphitheatre of rocks and sparse vegetation; the blue sky overhead; the boundless horizon where cloud-shadows drift away on the edge of the world. And past the door of your tent flows the rippling stream, the author of being of the patch of vegetation on the valley floor, and the fountain wherein you, your attendants, and your beasts thankfully slake your noonday thirst. At night the breeze whispers past, and only the champing of the mules, tethered near by, breaks the silence.

But Nature is not always inspiring. Sometimes she is unlovely. Sunset and sunrise, especially in tropical and semi-tropical countries, are her most attractive occasions. Bare, rocky slopes of useless *débris* and sterile plains take on an air of mystery and beauty when the shadows cast by the coming or departing orb are projected thereover. But, sunless, in the tropics, Nature is depressing.

I took the bridle off my mule to allow the animal to refresh itself on the scanty herbage, one day, whilst I waited for my man, whom I had despatched to a village near by on some errand. I had left early in the morning, and the camp was some five leagues away. Mounting a

small eminence whence the landscape could be observed, I fell into a reverie, which, later, cost me dear.

Below me stretched the landscape, now grim and grey under a lowering and leaden-coloured sky, whilst some straggling and miserable vegetation lay near the base of the bare, rocky hills. Some evidences of man's habitation, several wretched and poverty-stricken *chozas*, or Indian huts, were clustered there, surrounded by dirt, rags, and evil odours, which latter ascended even to where I was, for primitive man is a dirty being, and defiles the land for a remarkably large radius around him. The whole *ensemble* combined to produce in me a sense of depression, such as is experienced at times by those fond of Nature and her moods. Not a gleam of radiance touched with softening beam the far rocky fastnesses, and scarcely a change of colour between east and west indicated where the sun was deserting so uninviting a scene, for evening was approaching. The distant range, in its uniform garb of grey, and the middle distance of scarcely a mellower tint, bore out the harmony of monotony which the treeless waste and verdureless foreground completed. The face of Nature was overcast. Beautiful when gay, grand when angry, she, sullen and dispirited, casts her mood upon the mind of man. Her joyless landscape, the poetry of its colour banished, weighs upon his heart, and her sad firmament sometimes saddens his spirit. The leaden pall of the heavens exposed no edge of silver, and gave no promise for the morrow by some parting glow, nor showed a break in its opaque rigidity indicative of a bright beyond.

At such moments the mind sometimes questions the wherefore of existence, and indulges the vain speculation of reason as to the justice of Nature and Circumstance. What is the object of those miserable specimens of humankind below in their wretched huts? Why do they reproduce their kind; dirty, ignorant, of brutish intellect, and which, if the elements were not sometimes tempered to them, would share the same fate of so much of Nature's progeny, to which she gives birth only to destroy? What

are they for: to be "cast as rubbish to the void"? And even their observer, with his mere accident of a heavier brain, and all his kind—Man—

> "Her last work, who seemed so fair,
> Such splendid purpose in his eyes.
> Who rolled the psalm to wintry skies,
> And built him fanes of fruitless prayer"!

Enough! This would not do at all. I shook myself mentally, and arose. Where was my man? We must return to camp.

I descended the hill, intending to mount and ride homewards—a gallop would banish the fit of depression. Rounding the base of the hill, I came towards the rock around which I had made fast the halter. The mule was gone! Gone during my vain reverie.

Here was a pretty state of things. Five leagues, and night at hand! I rapidly remounted the hill and gazed towards the plain, hoping to see the animal in the gathering dusk, but nothing rewarded my search. I took up the carbine I had removed from the holster, from the rock against which it leaned, and approached the Indian huts. "*Buenas tardes*" ("Good afternoon"), I said to the Chola woman, mistress of that unlovely abode, and her brood of Indian children. "Have you seen my mule?" They had not. "Where is your man?" I continued, for there was the possibility that the presiding male genius of the place had stolen the animal. She explained in such a way as showed me that these fears were unfounded, looking fearfully the while at the stranger and his shouldered carbine. But I reassured her; gave her a small silver coin, and told her (she understood Spanish) what had occurred, munched a piece of cheese made of goat's milk which she offered, and, finding there was no guide who could conduct me across the mountain spur—which would greatly shorten the distance to camp—I "girded up my loins," and set forth alone, to cross it, confident of finding the way.

The *quebrada*, as in Peruvian-Spanish are termed the

V-shaped valleys which descend from or bisect the hills, and which in Mexico are termed *arroyos*, had for its floor a broad stream of dry sand deposited by the torrent which came down in times of rain, and which had filled up the interstices in the rocks, forming an easy path upwards, along which a motor-car might almost have ascended. But I was far away from those somewhat oppressive engines of modern locomotion!

Great ledges of quartz, polished by the action of the sand and water until they shone as if artificially wrought, the matrix in places of gleaming pyrites and other minerals, crossed the torrent way at different places; and huge boulders of the same material, rounded by the same agency, protruded here and there their glossy spheres from the bed, whilst the sand itself, left by the water, lay flat and level as a billiard table, except that it inclined upwards in a gentle plane. On either hand grim caverns opened in the wall of the canyon as I ascended, and far above, to where they were lost in the vapour of the gathering night, arose the mighty peaks of the secondary Andean chain.

On, on I went, up this untrodden way. Weird rock-forms, time-sculptured porphyry spectres, flanked the turns of this great stairway; and giant cacti, drawing their scanty nourishment from the crevices, stretched their skinny arms athwart the path as if in thorny embrace toward the unwary. Sheer precipices, quarried by the elements, towered upwards, like huge tablets upon whose surface some giant chisel might inscribe. Bastions and turrets, of Nature's fortifications, presented themselves at every turn; and not of Nature alone, for the ruins of prehistoric fortresses, the dwellings of some bygone Inca or Quechua tribe, frowned down upon the way in stern abandonment. Dark passages of entering torrent-beds, faintly discernible through the gloom, branched from the main descent, leading, perchance, to mysterious spaces where the genii of night might dwell, or the spirits of those ancient inhabitants have habitation. Huge store-houses, rock-walled and grim, were there, where perchance

imprisoned tempests dwelt—vast chambers such as dreams present, echoless, soundless, and alone. Cathedral towers and sculptured domes of Nature's building, against whose far façades the night-mists rolled dreamily, audience of the music of silence, the choir of the invisible; and pillars and buttresses, isolated and fantastic, the seeming remnant of some Cyclopean architect's handiwork, yet nought but the result of Nature's strange catastrophes. High terraces and grim escarpments, where cloud-spectres paced to and fro like vague deliberators, I saw; and long vistas of dim peaks, stretching away for ever, maze after maze in labyrinthine sequence, greeted my eyes. There arose dim rock-bowers, time-rippled and impressed, a far blending of stern stone and vapour, and ether-kissed summits, where avenues opened to nought save the imagination, and where the vision passed with fearful glance. Lost in grey distance were these soundless panoramas, far-stretching, awful, fascinating: where the soul, inspired for a period, leaves its clay. Alone, silent, inscrutable, inexorable, stern solitude reigned supreme, sovereign of that inorganic world!

Far up in that great labyrinth I stood, good reader. A sense of admiration mixed with awe takes possession of me, as such a scene and time must ever impress, from Moses on Sinai to the mountain-climber of to-day. Yet in such a situation a frivolous or fearful spirit would be overcome with dread—the terror of being alone, whilst the heart that knows itself to contain something of the elements whose influence it feels, knows its kinship and seeks its association. The grandeur of the scene, and mystery of the coming night, together with the sense of being utterly alone with the elements, awakens an indescribable charm, such as one has felt in childhood when dreaming that he held converse with an angel.

I had expected to reach the summit before it became dark, and to be able to observe the valley where my camp was pitched, but amphitheatre was succeeded by amphitheatre, labyrinth by labyrinth, summit by summit and I had to confess myself lost. The cold became

intense; the darkness closed in around, and the moon would not, I knew, arise for some hours. But there was nothing for it but to bear with philosophy, not only the cold, but the pangs of hunger which now attacked me. It was dangerous to go on in the gloom, so I sought a cavern. I made a futile search for fuel, but there was nothing that would burn; and having taken a drink of whisky-and-water from my small flask, I entered the cave to sleep.

Now, caves have always had a peculiar attraction for me since, as a boy, I read about Robinson Crusoe's Cave. You may recollect, good reader, for you have doubtless perused that interesting volume, that when Crusoe discovered his cave he penetrated to the far end of it, and discerned in the gloom a pair of gleaming eyes! But Crusoe was a devout man—rendered so by trial and misfortune; and being perfectly sure that the Devil could not lie concealed there, he investigated the matter *au fond*, and as a result routed out an old goat. So it befel me! Investigating the depth of my cave, I heard in the farthest corner a curious snorting, or breathing, and seemed to discern a dark form, with the occasional gleam as of demoniacal eyes! Have you ever experienced that curious sensation, good reader, when "gooseflesh" covers your body, and the scalp seems to be slowly lifted from your head? I felt it then, and these truthful chronicles must record it. But the feeling of fear, if such it were, was also accompanied by one of anger—a curious psychological combination—and I advanced with cocked carbine slowly towards the object. There was a horrid snort; a bound; a rush, and . . .

It was nothing more than a wild bull, which, more fearful than I, avoided me and bounded out of the cave. I rushed after it with the intention of bringing it down with a ball, but it was immediately swallowed up in the obscurity, and I heard it crashing away among the rocks and stones as it pursued its headlong flight down the gloomy canyon.

Having made sure that there were no further bovine—

or other—occupants of the cave, I lay down upon the soft white sand of its floor, with carbine and pistol close at hand, a flat stone for a pillow, and tried to woo a fitful slumber. Outside the mists floated down the valley, and the scarcely-perceptible breeze moaned within the cavern's mouth and played among the rocks in unseen sport. Otherwise not a sound broke the stillness; the solitude was uninterrupted; not a living thing was abroad, and even the only human being within that vast amphitheatre of the Andes was soon absent in the land of dreams.

Some hours must have passed, when I awoke, disturbed by a snorting and pawing, and looking up I beheld the form of the bull intercepting the light at the cavern's mouth. The animal, doubtless asking itself by what right he had been turned out of his warm cavern, had returned to see if the intruder had gone. I waved my arm. "Go away," I shouted, and, respecting the sound of a human voice, he retired. "Your hide," I meditated aloud, "is thicker than my cuticle, and can stand the cold better," adding: "This is the working of the laws of compensation, for the animal of greater intelligence is less thoroughly protected against the elements." The bull was probably, however, not consoled by this platitudinous remark, or indeed by any philosophical reflections, for he continued to paw the ground outside as if desirous of entering and contesting the matter.

A shaft of light suddenly entered the cave, and an upward effulgent glow illumined the sky outside, and the edge of a bright disc, silvery and soft, protruded above the black rampart of the hills on the opposite side of the valley. A rapid change took place within the canyon, and the darkness slowly disappeared, the light of the rising luminary invading the field it had occupied, leaving only the black shadows cast by its impinging rays upon the rocks. The full moon rose, and her fair face passed clear above the opposing hills, standing black as jet against her radiance. The light brought into strong relief the exposed surfaces of the landscape, touched the distant

peaks, brightening them with faint hues, and disclosing the places where Nature slumbered, to where, far away, the dominion of darkness still shrouded the distance.

I sprang up, my teeth chattering with cold; seized my carbine, stretched my cramped limbs, and draining the last mouthful from my flask, sallied from the cave. The way was now clearer, illumined by the moon, and I could continue my ascent of the canyon.

Hearing a noise I turned round, and the bull was standing close by. I advanced slowly towards him, and he did not retreat, but eyed me angrily. I raised my rifle, pointed it at the spot on his forehead between his eyes where a bullet's impact would cause him to drop like a stone, and gazed along the barrel. The animal and myself looked long at each other in the moonlight. "Should he rush?" he asked himself. "Should I fire?" I asked myself. Poor beast, why should I wantonly slay you? I lowered my weapon, and the animal lowered his noble head. I backed away, with my eyes still on him, and turned and pursued my road. At a turn of the canyon I looked around. The bull was now standing in front of the cave, as if in possession of his domicile again, and he watched me steadfastly until the landscape shut him out from view.

For hours I pursued my way, and the moon ran her course, and the sun arose over the eternal Andean summits to the east before I discerned, far, far below, the plain at whose farther side I believed my tent was pitched. I was intensely thirsty, rendered so by the keen air, and was now parched by the heat of the sun. Not a stream crossed the tortuous way by which I descended—a way fit rather for *vicuñas* or *llamas* than men, for, indeed, I simply zigzagged down the slopes as best I could, hoping to find some torrent-bed which should form a path. And yet these ravines are at times exceedingly difficult to descend. You are sometimes lured on by what seems an easy and favourable path, when suddenly you are brought to the verge of a frightful precipice, down which the stream leaps in time of rain, but which

affords you no passage, and you may have to ascend again for many weary paces and find another way. How thirsty I was, with the fatiguing advance!

As I have elsewhere remarked, in the vicissitudes of travel changes sometimes occur, which bring home to the traveller how slight is the breach between comfort and danger. Most travellers in wild countries have experienced this contrast. You pursue your way to carry out your plans, and all seems well, when lo! a sudden change of circumstance occurs, and before you realise it you are comparing the danger and discomfort of the dilemma you are in, with the security of yesterday. From the depths of your armchair, kind reader, in your comfortable club or home, you may not be able to grasp this. None of us could. Little are we able to realise the effect of sudden changes, until they are upon us. Yesterday, perchance, we were in comfort and plenty; to-day in difficulty and starving, our former resources far removed from us.

I had now reached the lower slopes of the hills, but so far had not crossed any stream or rivulet where I could drink, for this western slope of the Andes, the coast range, is an almost rainless region, and water is scarce. The zenith sun now beat down mercilessly, and the rocks gave forth a reflected heat. Nature cried out for moisture, as had, perchance, many a thirsty being on this inhospitable plain, where no Moses with impatient divining-wand appeared, to strike the rocky ribs of the mountain-side and bring forth water!

I now reached the level and sandy desert at the base of the hills: a wide waste which I knew would be difficult and trying to cross on foot. It was evident that the windings of the canyon which I had been obliged to follow had taken me considerably out of my way, and to reach my objective point I should have to round a spur whose promontory descended into the desert many miles towards the horizon. The shorter cut had proved to be a long route, as often happens; and it would have been wiser to have followed the plain at the other side,

where I had lost my mule, than to have attempted this way alone.

The region I was now traversing was a volcanic one. Enormous sheets of old lava, or tufa, capped the lower hills, worn away, however, in the ravines, and exposing the underlying granite. The sandy floor of the desert was covered in places with white volcanic ash, drifted hither and thither by the wind from some long-past eruption of far-off volcanoes. All was still; not a whisper broke the sultry noonday silence, and no movement was visible upon the tableland, where the only effect upon the tympanum of the attentive ear was that curious feeling of such places, where the "sound" of the sunshine is almost apparent. The steely azure of the farthest range stood out against the grey-blue, which a cloudless tropical sky at noonday presents. The enchanting hue of the atmospheric distance bathed the scarred and ridged topography with its indefinable influence, and the shadows cast by the varying formations athwart the slopes brought out the tracery of the mysterious and distant canyons, where successive peak, spur, and valley displayed their geometrical combinations to the view. They seemed like intersecting planes, pyramids, and cones: in their prodigious disarrangement the deserted work of some giant geometrician, who, wearied of problems of their disposition, had left his mighty models there in disorder strewn; or, like the neglected cubes of some Cyclopean child, whose dawning reason some half-hour of an Æon ago had dallied away the—to him—few fleeting moments of a geological age, in meaningless displacement of his toys!

But if both had suspended their labour or their pleasure the elements had taken up their operations. These unflagging agents of inexorable time, these democratic levellers who work unceasingly to bring the proud and lofty summits down, had, in their endless, silent quarryings, destroyed the solids' symmetry with fractured strata and sheer crevasse—the complement of plutonic upheavals of ages past; new pages in this book of stone, for the intermittent rains of higher regions had hurtled

down their slopes, pouring towards the plain in impetuous passage, excavating scarred *quebradas*, deep cut within the bowels of the rocky hills.

Notwithstanding the hunger and thirst from which I suffered, I marked, both from habit and from interest, the varying formation of the region, for to the trained mind the geological and topographical features of a landscape are of intense interest. Pulling myself together, I struck across the sand desert, towards the distant spur beyond which—I hoped—my camp must lie. God help me if it did not!

What for are these vast expanses of desert, hot by day and cold by night? Are they mighty sun-engines, whose difference of potential only awaits the application of man's growing intelligence to yield him some use and profit? What for are these inexhaustible constituents of granite and rock? shall not the embodied energy which put and holds their elements in unison disclose and lend itself—some day—to the machinations of the human engineer? Does Nature at times commune with man? Has she some continuous messages from some other state which she is always endeavouring to impress upon the dull understanding of her principal creation—man? Doubtless; for is he not ever striving to catch its meaning, listening upon the confines of his world to grasp and register some accent of that Voice which floats upon the endless mean; pressing to the keyhole of the empyrean his earthly diaphragm, and striving to learn a glint of destiny!

Such reflections passed through my mind as I tramped onwards across the desert, my eyes ever upon the distant spur; and I fell into a sort of dreamy state, due to hunger and lack of sleep, and the effect of the sudden changes of temperature which I had undergone. The air came as if in blasts from a furnace. Miniature cyclones, small "water-spouts" of dust, whirled skywards on the far horizon, with a spiro-vortex motion which carried their upper extremities to the sky—veritable pillars of sand, which followed each other over the plain as if in some

gigantic game of elusion and pursuit, whose helical eddyings and intermittent lurchings seemed to betoken a scarcely self-containing force. The phenomena of nature seemed to be acutely present to my mind, and a species of semi-delirium rendered me almost oblivious of bodily fatigue. I thought of home, of a Devonshire garden amid the scent of wallflowers or violets. Oh, God of Spring! A whole world opens to my senses—a world so far away, so long ago! I pull down the brim of my hat, and shut out the glowing sun-ball, and dwell a moment in that springtime garden with loved ones sitting there. But I nearly lose my footing, and, pulling myself together, stride forward. I will not sit down on that grassy bank of dreamland!

The sand is whirled into my face as if some demon of the desert mocked me. The mirage, a phenomenon of those regions, builds a vague and unstable world on the horizon — a lake, houses, trees, which recede as I advance. Again I pull down my hat's brim and enter the springtime garden, and again the sand-sleet strikes my face and wakes me, and—garden, lake, trees, and home, they are retreating ever, like the mirage, like hope—that pillared cloud of day or night, alternate grim or gay, elusive on the future's borderland!

Good reader, possibly you have never suffered from the effects of fatigue, exposure, thirst, hunger, and the like. I was going to say I trust you never will, yet there are sweet uses and comparisons of such adversity. For, as the pitiless sun approached the horizon, and as I staggered on and reached the point or spur towards which I had set my course, as I rounded a huge projecting buttress of rocks, I came suddenly upon—what?—a stream of water sparkling down from above, so sweet and clear that imagination might declare it born but recently of some divine intent—and falling with a gentle murmur as if the echoes of the voice which bid it be, still lingered in it.

. . . . . .

I quenched my thirst at this beautiful stream. It

was, I knew, the source of that whereon my camp was pitched. As I rested there, gratefully, under the shadow of a rock, I heard the noise of approaching hoofs, and around the farther side of the promontory appeared two men and three animals—my servants and my mule. As they informed me, the animal had returned alone to camp with the bridle tied to the saddle-bow, as I had left it. They had returned over the trail and interviewed the Chola woman, who had told them of my intention to take a "short cut" over the mountains, and it being impossible to take the mules that way, they had returned to seek and meet me.

They made a fire, and I partook of some soup, and other satisfactory matters, ingredients of which were in my saddle-bags; and, having rested a while, we mounted our mules and returned to the camp.

CHAPTER V

PERUVIAN TRAVEL—*Continued*

THE coast of Peru possesses some excellent seaports, as has been shown, whilst others of the places of debarkation are exposed and difficult, and passengers have sometimes to be hauled up in a barrel, by means of the steam crane used for unloading goods. Among the worst of these ports is Mollendo, some 450 miles south of Callao, and which, notwithstanding the fact that it is the terminus of the Southern Railway of Peru—an important system many hundreds of miles in length, giving access to Lake Titicaca and communication with Bolivia, and outlet to its commerce—is nothing but an open roadstead; and the waves, at some seasons of the year, roll in against the landing-place with such force that passengers cannot be landed. This port is a living example of the "sins of the fathers being visited upon the children," unto the second and third generation at least; for the port and railway terminus was made at Mollendo instead of Islay—a natural harbour a few miles further north—in accordance with certain vested interests, and accompanied by bribery and corruption—elements which, indeed, were rife in Peru during the epoch of railway construction and the guano negotiations, last century, and whose evil effects have borne a lasting fruit. Some work was recently undertaken to "improve" the small rocky inlet where landing is effected. I examined this work, and it consisted of cutting off the top of a rocky hill-promontory, and forming with the *débris* a species of breakwater. It did not seem to occur to the individuals who carried

out this work that the light material resulting from this excavation would be washed away during the first storm, and which, in effect, has taken place to some extent, partly filling up the inlet. I drew attention to this in the Lima papers, and the work was stopped, whether as a result of this, or of other investigations, I do not know. Doubtless the terminus will be made at Islay in some future period.

Northwardly and southwardly of Mollendo the land consists of the usual sterile sandy coast plains, occasionally broken by valleys with cane and cotton plantations, irrigated from the descending rivers. Going northwardly along the coast, on my way to examine some gold mines in the interior, I passed several fine streams and valleys of this nature, such as the rivers of Camaná and of Ocoña. The inhabitants of the towns of the same names, in these respective valleys, are all Spanish-speaking; and Quechua is not understood by the Indians in the coast cities. Nearly all the products of semi-tropical regions are grown, such as sugar-cane, coffee, bananas, oranges, figs, etc., whilst enormous groves of olive-trees abound, the great diameter of whose trunks attest their age.

The houses of the Indian part of the population are built of wattles or canes, neatly tied together or plaited, and with lattice-work for the windows, and steep pitched roofs of thatch: the whole presenting a picturesque aspect, and being an adaptation to climatic conditions of heat, calling for consequent free ventilation. In Ocoña the houses are of one storey, the walls and roof supported by uprights made of forked olive trunks, placed outside like columns, which give the streets a curious appearance. These wattle houses are sometimes newly built of green cane with the leaves on—a fact which I noticed by reason of my mule on one occasion endeavouring to eat up a portion of such a dwelling. The animal had been tethered near the wall, at the end of a day's journey, and a few minutes afterwards the owner of the place—an Indian woman—came rushing about to find me. "Señor," she exclaimed, "please to

have your mule taken away; it is eating my house!" She further declaimed that she was a poor widow, scarcely able to support herself and her children! I returned to the spot with her, and found that the mule, growing impatient at the delay of the *arriero*, who had gone to purchase fodder, and hungry after the day's journey, had eaten a large hole in the wall, and was now attacking the roof, whilst the pack animals had also demolished one corner of an outhouse. Removing the animals, I made the old woman some compensation for the damage. My mule was evidently of a pharasaical disposition, for had he not "devoured widows' houses"? But I forgave him that misdemeanour, for he was a good and astute beast, and served me on the morrow. I was early in the saddle, for before us lay 20 leagues of hot and toilsome road, across an absolutely uninhabited and treeless desert. I left before daybreak, and the orb of day had described his glowing arc across the heavens, and sank again beneath the horizon, long before I arrived at my objective point. Wearied of waiting for the lagging pack-mule and *arriero*, I had advanced considerably on the way as night fell, although I did not know the road —if such the occasional track of animals' footprints in the sandy hills might be termed—badly illumined by the faint rays of an intermittent moon. Plunged in abstraction, my thoughts far away, I missed the track, and came to a sudden halt as the fact dawned upon me that I was lost; but I wisely forbore to go on, lest I might wander altogether from the way. Suddenly my mule pricked up his ears and sniffed the evening breeze. I let the reins hang loose—I knew he had often been over that route before—and the intelligent beast moved on and continued the march with confident stride, and unerringly wound his way through sandy defiles and around the gloomy bases of the hills until the lights of the town appeared, only stopping before the door of the *fonda*, or little hotel, of the place. Such is the instinct of these animals, and the wise horseman in such

circumstances does not force his beast to a direction against its will.

Next to his own health, the main consideration for the traveller in South America is the quality of his horse or mule. Hard and toilsome will be your day's travel if the animal is a poor one; and this reminds me of a trying experience in crossing a desert in the region of the nitrate fields of Tarapacá, in the northern part of Chile (and which formerly belonged to Peru). I left the Cordillera early in the morning, expecting to arrive at one of the nitrate *oficinas* at 6 P.M.—a matter of 75 miles; but I had not reckoned upon my mule falling lame—due to its having been badly shod—and which happened about midday. In the deep sand of that rainless region the unfortunate beast floundered hopelessly, and I dismounted for a space and led it. The sun beat down fiercely, as it only can on that frightful plain, and swirling sand-storms enveloped me at times. I did not lose the track—why? For a curious reason. The trail over this desert is securely marked out by reason of the numberless empty bottles which strew it—bottles which have contained water and other liquids, and which have been thrown away (the bottles, not the liquids) by travellers who have not desired to carry any useless dead load. There are champagne bottles, beer, whisky, brandy, mineral water, and every other kind of bottle known—I was going to say, to civilised man! They bear every known label, and cart-loads of them could be recovered. I may add that the seaport for this region is Iquique, where dwells a large and prosperous British community engaged in converting nitrate into pounds sterling, and which operation is generally successfully performed to the profit of the aforesaid Britishers and their dependent shareholders. But I digress. My reason for speaking of the British colony was only to explain the original existence of such numerous bottles, with foreign labels, in the country!

To return to my journey. I was just about to mount the unfortunate mule again in order to try to urge it to

something speedier than a crawl, when the attention of both of us was drawn towards an extraordinary object which was rapidly advancing in our direction, accompanied by a singular banging noise. At first sight I could not explain what it was, and indeed my attention was diverted towards the mule, who, affrighted, endeavoured to bolt, notwithstanding its lameness. The object rapidly neared us, and I was able to see what it was—nothing more fearful or dangerous than a large, square petroleum tin, which had been caught up by a small cyclone, or dust whirlwind, and was bounding along in the centre of a dust column, giving forth a characteristic banging every time it struck the ground. I could scarcely refrain from laughing, but it proved to be no laughing matter, for, terrified out of its senses by the object, which was heading straight for us, the mule bolted; and as I had wound the reins around my wrist for further security in holding it, I was jerked over and dragged along in the dust.

Now, it is no joke to be dragged by a mule, even on account of a flying petroleum tin. I remember wondering what Don Quixote would have done under the circumstances! He who charged at wine-pots, and did battle with windmills. But I would not let go—to lose my mule, well I knew, would expose me to the danger of a terribly fatiguing tramp through the loose sand of the desert, with heat, thirst, and hunger as my companions, for my attendant had got drunk the night before, and I had been obliged to set out alone.

I struggled to my feet. The object which had frightened the mule had passed, and was disappearing on the far horizon of the desert. Fortunately the bridle had not broken, and I mounted. The animal settled down to its former lameness, and I made but little progress over that interminable sea of sand. The day wore on. The sun went down; the moon went down, the stars came up and went down, and at last my mule went down, and I only avoided going down myself by an alert movement.

Only those who have crossed these strange deserts can picture their curious formation. Like a suddenly arrested or frozen sea of mud-waves, saturated with salt, and showing white on their under edges, the surface presents itself to the traveller's gaze bounded only by the horizon. Picture yourself struggling, kind reader, across this appalling place, breaking knee-deep into the dry mud-waves every instant, and the wretched beast behind you pulling back at the lariat in your hand. If your imagination is strong enough, you have a picture of Hades, and a lost spirit wandering over endless freshly-made tombs! Add to this a parching thirst, and weariness unspeakable, and then settle down comfortably into your armchair. Fortunately I was not famished. I had brought some light refreshment, and had, in addition, followed—as I ever did in these travels—the sage advice contained in the Spanish proverb:

"De tu casa á la agena
Sal con la barriga llena!"

which I may freely translate: "From thine own to a stranger's house, go forth with a well-filled belly!"

But to cut short this most unpleasant account, I arrived towards the early morning upon an eminence, and beheld the light of the town, whilst the faint whistle of a locomotive upon the nitrate railway fell like music on my ears.

To return to the journey to whose description this chapter is devoted. The sandy hills and valleys along the Peruvian coast are often trying to the horseman, the going being fatiguing to man and beast, on account of the floundering through loose sand which has to be performed. In places, the whole country is strewn with volcanic ash: the result of the eruptions of far-off volcanoes in bygone years. On the coast, and the plain further inland, are encountered many of the extraordinary sand-dunes known in Spanish as *Médanos*, which arrest the attention of the observant traveller, and are worthy of some description. The view I give shows an "army"

of these curious structures "marching" across the desert near Arequipa, for they veritably move, creeping slowly along like colossal turtles. I examined these; they consist of heaps of the finest wind-blown sand, and possess the strange property of preserving always a certain form or geometrical shape. They are circular on plan with a crescent-shaped front; the horns of the crescent forming the "prow," if such it may be termed. Progress is caused by the wind, and on examining them closely, when the wind blows it is seen that their backs are covered with minute waves or vibrations, giving a quivering appearance to the mass; and the particles of sand constantly change place, rolling over and over to the front; and by virtue of this change of position of its particles the whole mass advances, retaining, however, its curious form. Their formation is shown on the accompanying sketch.

Other curious caprices of Nature in the disposition of earth, sand, and rocks are often witnessed in these strange regions. I have seen vast sand-banks, with beautiful crests and summits; waves of sand, which are built up by the wind, and advance as if to engulf whatever they may encounter. And I have crossed plains strewn with slabs of volcanic rock, thousands of which had been worn into troughs and basins by the action of the wind and sand. Thousands of others had holes through them, as if bored by some implement, and on examination the operation of boring is disclosed. A hollow or depression is formed or exists in the slab, and it is seen, on observing closely, that a little vortex of sand is busily at work, actuated by the wind, in the bottom of this depression, where, in the course of long periods, a hole is gradually worn right through. Many of these slabs present the appearance of having been artificially worked.

Another curious formation of the elements—a caprice of water this time—are the *Lloclias*, a name given by the Indians to the alluvial fans at the head of the small ravines on precipitous mountain-sides. The water, in times of rain, rushes down the rocky gullies of the steep slopes, forming curious open conduits with walls built

up of blocks of stone, which have the appearance of having been put in place artificially; and it is difficult to explain the action of the water in making these structures. It is probably due to the intermittent force of floods; and the walls are piled up of blocks and pebbles, with flat faces often, and much steeper than the natural "angle of repose" for such material. Below where this natural conduit terminates, the fine matter brought down from the slope above, during the ages, spreads out in a flat bar, or alluvial fan, sometimes of considerable area; and here the Indians construct their huts, and plant their maize or vines, etc. The name *Lloclia* is given to these places, and they form a marked feature of the ravines of the foothills of the Andes.

On my journey along the coast I passed through a *jaguey* (pronounce "ha-why"), or small wood, and which had an evil reputation. The name is given especially to thickets or woods in a sandy desert which are due to the presence of water underground, from a stream or river which sinks in such places, not being of sufficient volume to reach the sea. The word is, possibly, allied to the Brazilian word *jaguar*, from the animal which inhabits the woods on the Amazon.

Well, the evil reputation of this place was due—so my attendant, who knew it, informed me—to the murder by some thieves of a messenger who was journeying to an adjacent mine with bags of silver coin to pay the miners, years ago. The robbers had waylaid him in the wood, slain him, and appropriated the money. Other outrages, he said, had been committed upon travellers here, and he looked fearfully around in the growing dusk as we entered the place, as if momentarily expecting to behold the forms of some robbers, or the apparitions of some murdered wayfarer, and only gathering some re-assurance from contemplating the large Colts' revolver which I carried at my belt. An old ruined wattle house stood near the trail, and as nightfall was at hand, and a sand-storm impending, I decided to halt and make use of the shelter: a proceeding which by no means met with

my servant's approval, in view of the matters previously related. The night fell; the door was barred. The wind whistled drearily about the place, and the Pacific rollers beat upon the shore but a thousand yards away. The impatient mules stamped their indignation at the scant fodder which had been given them, and snorted from time to time as if apprehensive of some prowling footsteps. The portable spirit-lamp was lighted, and coffee and food partaken of, and my cot having been set up, I laid down to slumber; whilst my attendant, spreading his *poncho* in one corner, also endeavoured to woo some fitful and nervous repose.

I had scarcely been asleep for half an hour when I was aroused by a frightful yell, and starting up, I hastily lit a match. My man was on his feet, with signs of fear upon his countenance — it was he who had cried out—and in response to my question, informed me that there were robbers about, and that some one had pushed against the frail wall of the hut from outside. I certainly heard footsteps in the cleared space outside the house, and, fearing for the safety of the mules, I hastily put on my boots, and grasped the revolver. Then I bid the boy open the door, and rushed suddenly out into the moonlight with cocked weapon, ready to fire, if such were necessary. But this truthful narrative has to record that no dramatic sequel was experienced. What I found was that the *arriero* had arrived with the pack-mules—he had been delayed at the last stopping-place—and was peacefully engaged in unloading the animals, so I turned in and slept peacefully until morning.

The rivers which flow to the Pacific coast, such as the Ocoña and Camaná, do not form estuaries or harbours at their embouchures. In the dry season, when the streams are at their lowest, the sea throws up a great bank of stones and shingle right across the mouth, and the rollers beat against it, and the fresh-water current has outlet by a narrow channel at one side; whilst in the rainy season large volumes of water descend from the Cordillera and sweep this bar entirely away, filling the wide channel

from side to side, and the fresh water plunges into the sea, the current battling fiercely with the waves as it mingles therewith.

I have spoken elsewhere of the vestiges of the great earthquake wave which devastated that coast long ago, and even now the people retain the recollection, handed down to them, of that fearful time when "*salio la mar*" ("the sea came out"), as they put it. At that, and subsequent periods, the buildings, and especially the churches, in the interior towns were cracked or ruined. At one of these, a small town, the *cura* and principal inhabitants requested me to examine their church, and give them, as an engineer, some idea as to its possible restoration, and which I gladly did for them. The building was in a dangerous condition. The *boveda*, or vaulted roof—for it had been well constructed of stone—had partly fallen, and was rendered useless, whilst the walls were leaning outwards, seriously far from the perpendicular. To restore the roof was hopeless, but I advised attempting the drawing in of the walls by means of placing iron bars across and screwing them up at the ends—a suggestion which filled them with delight, and which, I believe, was subsequently carried out. As to the roof, it was hopeless; and the *cura* informed me with much pride that he intended to re-roof it with "a beautiful modern material, worthy of a house of God!" Can you guess, kind reader, what he had in view? *Corrugated iron!* That most prosaic and hideous product: that horrible material whose appearance marks the frontiers of civilisation: the exile of beauty and of art, and the edge of decency and order! Shades of Ruskin and the poets! Corrugated iron upon an ancient temple! But I condemned the idea *in toto*, and after due consideration of all available material, advised the use of tiles. These tiles are of a beautiful red colour, made in the vicinity, in the form of pan tiles, such as are common in Europe; and the corrugated iron was not ordered, for which I congratulated myself.

In this neighbourhood I saw other ruined temples

for, although in the chapter on "The Church in Peru" I have described the general structure as being of adobe, nevertheless there are some regions where stone is employed. And here is an example of the effect on man's architecture of the material of a particular environment. In this region, as in Arequipa, the buildings are of cut blocks of a soft white volcanic stone, or tufa, which is durable and lasting, and lends itself readily to the chisel. Here, then, in Peru are all the ages of architecture—the wattle hut, the adobe walls, and the stone temples.

I have elsewhere described the characteristics of the inhabitants of these regions. The Cholos are ever prone to give miraculous origins, portents, and meanings to things, and to invest chance occurrences with some supernatural attributes. It chanced that for one night, whilst on this expedition, we had slept on a high plateau, as time had not permitted us to descend before nightfall. In the early morning — the sun had risen — we came down, and I beheld some of the remarkable mist-effects of those regions. The valley below us was filled with a sea of mist, but a sea with a surface on which we looked down as upon an ocean of waters, so sharply defined was it, and so remarkably did the mist-billows roll against the rocky promontories. At length we came down to the surface of this sea—all below being invisible. The road wound along the edge of a precipice, and looking down from my mule upon the mist—I was in advance—I beheld a strange phenomenon. There, a few yards away, was the image of a man mounted upon a beast, and around his head was a glorious halo of rainbow light and colours. It kept pace with me, stopped when I stopped, and moved when I moved. For a moment I was dumbfounded, so remarkable was the apparition. I halted, watching it in amaze, and at length the truth flashed upon me. It was an Anthelion—a halo or nimbus projected from my own figure by the rays of the sun upon the mist, and such as occur in Alpine regions and elsewhere. In fact, I recollected having seen the same

Photo] PART OF AREQUIPA AND THE MISTI VOLCANO. [*N. P. Edwards.*

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phenomenon, though far less perfect, in the flying foam at the foot of Niagara falls, years ago. My men came up, and as they approached, wishing to mark the effect upon them of this magical apparition, I bid them halt, and pointed to the precipice. Exclamations of astonishment arose from them. "It is Christ riding upon an ass," they said; and really the image was very similar to the popular coloured pictures representing Jesus of Nazareth, which are common in Spanish-American countries. The men became quite excited; and one threw himself from his horse in an attitude of adoration, and I thought it time to undeceive them.

"No," I said, "it is my shadow; the '*gloria*,' as you call it, is around my head." "Then," replied one of them, as they gazed in astonishment at me, "the *Señor* must be a holy personage," and they seemed bent—poor fellows — on rendering me some adoration or homage. This was rather embarrassing, and better to explain the matter to them, I said: "Look, I will make it disappear;" and I advanced away from the edge of the precipice, so that the sun's rays should no longer project the image upon the mist below. But to my surprise they replied that the halo had not gone; and for a moment I was puzzled. Of course—how stupid! —each head projected a halo! That which I had seen was my own; that which they had seen was not mine, but their own. Nor could any one see more than one —his own. Having argued this in my own mind, I explained it to the men, and proved it by the waving of arms and *ponchos;* and although they accepted the explanation, they still attached something supernatural to it, and informed the people in the next village that we had seen a Celestial apparition. I was obliged to give a sort of lecture on the matter to the Indians, and I took the opportunity of pointing a moral, saying that every individual possessed equal attributes for good that miraculous manifestations were not necessary to mankind, and that every one might possess a halo of glory in his own right, did he but strive to attain

it! This was well received; and probably the Indians of that place recollect the incident of the Anthelion still, and the *inglés* who conjured it up.

The incident reminded me of a former one, wherein I had also been invested with some "holy" attributes. I had at that time a very intelligent *mozo*, or servant, who was fond of reading, and who had studied the Bible — a rare thing in Spanish-American countries. I had been making endeavours for several days to arrange a certain matter regarding the title to some mines with the owners, who were principally women, and which had been difficult to bring to an end. In conversation with my servant, casually, I mentioned how obstinate these people were. He went out on an errand soon afterwards, and when he returned he informed me that he had seen the women, and that the affair was satisfactorily arranged. "And what have you told them, to cause them to accede?" I asked in surprise. "I said," he replied gravely, "'Ladies, you must concede what this gentleman wants, because he is of the same family as Jesus Christ'!" Astonished, and almost shocked, at this assertion, I commanded him to explain; which he did by reminding me that my name (Enock) was similar to the Enoch of early Bible history, who was of the line of ancestry of the Holy Family!

It is remarkable how, in such countries as Peru and Mexico, as indeed throughout Spanish-America generally, the persons of the Holy Family, the Saints, the Cross, and all and every other attribute of the religion of which they are part, are interwoven with the every-day life and acts of the people of those regions. It was a field peculiarly susceptible for the reception of the incidents and influences of Roman Catholicism. Credulous and imaginative, the mind of the Indian took hold of its incidents and attributes, and the "outward and visible" forms of its strange imaginings he henceforward adopted, and they are indelibly stamped into the regimen of his existence. Every hill is sur-

mounted by a Cross; every mine, and every different gallery therein, bears the name of some Saint; every one has his patron saint — his Saints' day; and every man and every woman carries some amulet — some charm, image, or representation, of cross, or bleeding heart, or Virgin, or other holy attribute, which shall protect them, they say, against the powers of darkness; and stories and histories grow about valleys, hills, and plains, of miraculous visitations, upon the smallest pretext. A story among the people in some parts of Peru is that about the painted Christ which all could see. Once upon a time a stranger—a painter —visited a certain village, and during his stay he ascended a hill which overlooked the place, and painted on a flat, vertical rock—so he informed them—a picture of Christ upon the Cross. "But," he further informed them, "this representation has the peculiar quality that it is only visible to those of pure and charitable mind." After his departure the inhabitants sneaked up the hill, one by one, and alone whenever they could, not wanting to be discomfited by the possible failure to see the representation, before others. "Have you seen the Christ?" and "Have you seen it?" was asked among them. "Oh yes, we have seen it! Have you?" was freely replied. All had seen it, they stated; and sometime afterwards the painter returned. "Oh yes; it is a beautiful representation," they answered in reply to his questions; but, curiously enough, none were able to give the slightest description of the detail or colours of the painting. "Good people," at last said the painter, when he had questioned them all, "it is true that I painted the Christ on yonder rock, but it was done with pigments so rare that they faded away before sunrise, and before a single inhabitant had ascended the hill!"

CHAPTER VI

PERUVIAN TRAVEL—*Continued*

On arriving at the river from the plateau where we had slept on the night previous to seeing the Anthelion, we were hungry and thirsty, for the camping out had been unpremeditated, and but little in the way of provisions carried. On the river banks were Indians fishing, catching quantities of huge fresh-water prawns, or "Camarones." A pot was boiling, and having purchased a heap of the crustacea, I had them plunged in, and we devoured them to our hearts' content, whilst the mules drank their fill from the limpid stream. The Camarones are caught by the method of damming up the stream by stakes driven into the bed, and willow branches twined in between, leaving a small opening in one place which is filled by a long taper basket, the wide mouth up stream. The Camarones are swept down, or swim along with the current, and are so trapped in the basket, where they are promptly bagged.

In many of the coast valleys excellent wine is made—port, claret, sherry, etc.—in the primitive wine-presses. In some places it is stored in enormous earthen pots, and these pots are worthy of mention. The art of making them is not now known to the people in those places, and they do not seem to know whether they were originally made by the Spaniards, or whether they belong to prehispanic art. Probably the Spaniards showed the natives how to make them, for they seem to be more or less like those of the land of Don Quixote de la Mancha. These huge pots are in some cases as much as 9 feet high, and 6 in diameter, tapering towards

the bottom, and beautifully true in circular form; of a red clay, and partly glazed. They could not have been turned on a potter's wheel, and must have been moulded in some way.

I have not made mention of Inca pottery; thousands of examples of these are constantly found in the *huacas* or burial places, and are known as *huacos*. They are often exceedingly beautiful, and cleverly made. In general they take the form of vessels for water, usually of two such, joined together, and ornamented with grotesque devices, often of intricate and well-executed moulding or sculpture. Often they are in the form of birds or animals, and a favourite device has been to give them certain acoustic properties, so that when water is poured from one to the other they imitate the sound made by the creatures they represent, such as swans, ducks, etc. A friend in Huaraz described one of these, which he possessed, and which had such lifelike attributes in the notes it represented when water was poured in—it was in the form of two ducks, and gave forth the noise similar to two of these birds when fighting—that when it was made to operate, the real ducks outside in his yard, hearing the noise, immediately raised an answering clamour! I am not prepared to vouch for the truth of this, and can only state that these clay *huacos* are wonderfully made, and are of beautiful form, and that their makers, both in these articles and in other matters, showed a high knowledge of acoustics. The priests of the Inca *régime* undoubtedly imposed upon their votaries, by this method, in hollow images and subterranean altars.

The modern pottery of the Indians is far less notable or finished than that of their predecessors in the art, although on the high plateau of Titicaca I have purchased and seen really beautiful and ingenious pieces of modern pottery, made by the Peruvian and Bolivian Quechua and Aymará Indians. Also, the Indians of the interior are very clever weavers of textile fabrics, as coloured mats and carpets. In these they picture the forms of birds, animals, and men and women, always well done

and perfectly recognisable. The women are clever at knitting. I have purchased knitted objects representing Indian men and women, llamas with burdens, vicuñas, and even mountains and scenery, all reproduced in coloured wools, and in three-dimensional form—that is, as true objects, not as pictures or flat representations. They also knit woollen caps, which the Indians wear over the head and ears on the cold *puna*, and sometimes with figures of men and animals decorating them. I have found these caps very comfortable in passing the cold winds of the mountains, and a protection against *soroche*.

Another branch of their modern art is that of handsomely decorated gourds, the "engraving" or decorating being cut or burned in. All these matters show the great patience with which the Indian is endowed. What other race, for example, could spend months, even years, over the production of a single hat, such as the best class of so-called Panama hats require, and which are really made by the Indians of the northern part of Peru and the adjoining regions of Ecuador? Some of these hats are of the most exquisite workmanship; they are made of the most chosen part of the grass which yields the fibre, and are woven only at a certain time of day during which a certain temperature exists. They are frequently sold—this highest class of hat—for as much as £50 each.

The *ponchos*, which the Indians weave, are further examples of their textile art. Those made of vicuña wool may cost, at times, as much as £20 to £50 each. The workmanship is marvellous; and so close and careful is the weaving that they are waterproof. You can hold water in them at times, and it will not pass through, as indeed may be done also with the Panama hats. They also weave large check "tweeds," such as might excite the envy of the Cockney tripper, did he extend his excursions far enough!

The Indians of these countries have learned to make very extensive use of the natural products which surround

them. The prairie grass which abounds on the table-lands, the *ichu*, has furnished them with fuel for smelting ores, ropes for suspension bridges, fibre for hats, material for rafts, covering for roofs, fodder, and a variety of other uses. The Maguey (*agave Americana*), or American aloe, known also as the Century plant, furnishes them with fibre for ropes; whilst the stems, which grow 20 or more feet high, form poles for rafters, or other purposes. It is a remarkable thing that the Indians of South America have never learned how to use the sap or juice of the Maguey to make *pulque*, the famous national beverage of the Mexicans, the making of which is such an important industry in Mexico. The plant abounds in every valley up to a certain altitude, and is, in fact, known among the Peruvian Indians by the name of *Penca Mexicana*; and I see no reason why it should not be used for the same purpose in South America. I endeavoured to instruct some persons in one part of Peru in the matter, but I was without the peculiar syphon-like implement that the Mexicans use for the extraction of the juice—or *agua miel*, as they term it. Probably some enterprising individual might build up an industry in this matter.

At present the Peruvian Indian takes large quantities of his favourite *chicha*, or fermented drink, made from cereals—especially maize—and other plants. This is not a spirit; it is rather a species of beer, and is generally wholesome and refreshing. Unfortunately, he is acquiring more and more the vice of drinking the fiery sugar-cane rum, whose ravages I have elsewhere described. I recollect towards the close of day, after a long and toilsome day's ride, with only hasty rations eaten in the saddle, finding that my stock of tea was entirely exhausted—and tea I always took in the afternoon. No matter where I was, at the hour sacred to that beverage, I invariably called a halt, and over a fire of wood or grass, or spirit-stove, the non-inebriating cup was prepared, and I arose refreshed, to conquer further leagues. On this occasion the road passed through numerous villages, replete with small *tiendas* and

chinganas, as the little native shops are termed. What was stacked on the shelves in these places? Bottles of rum—nothing else, generally. Village after village, and shop after shop, I bid my servant enter as we passed; but no one sold tea. Some of them had heard of it, and directed us to other places, where, they said, it might possibly be procured; but it ever proved futile. Nor could they understand why an able-bodied traveller should ask for tea, when such large amounts of rum were to be had for a few cents!

At last I called a halt in a village, around whose green, or *plaza*, I saw some shops of quite a promising aspect, as if packages of tea might be reposing on the shelves, which I dimly discerned from afar. Alas, vain hope! At shop after shop, riding my mule up to the door, I enquired of the presiding genius for "Tea." My men went on a similar errand in the side streets, with a like effect; and as I rode to the centre of the *plaza*, a small crowd had collected, curious to see the *inglés* who wanted some tea. "Listen," I said, addressing them, "I will give a *libra de oro* (a golden pound) for a pot of tea!" I gazed expectantly around after this rash offer, which, however, I would have fulfilled; but, notwithstanding the excitement which it created, there were no bidders, and, metaphorically shaking the dust off my feet of that place, I departed.

The traveller in these regions should not fail to carry with him certain essential matters in the way of provisions, as tea, coffee, bread, cocoa, sugar, and other matters. Fowls, eggs, cheese, meat and vegetables he may obtain in the villages through which he passes, unless he is in the heart of the *No hay* zone, which I have elsewhere described. One general axiom may be borne in mind—that tinned meats and other provisions should be avoided. They suffer from two causes: the first being, especially in the American products, the doubtful nature or quality of the material; and secondly, the fact that the tin undoubtedly exercises a deleterious effect on the contents. I recollect nearly dying from excessive vomiting on one occasion, on the

top of the Andes, due to having eaten some Chicago "salt horse," or other tinned quadruped masquerading under the name of meat; and on another, a tin of sardines rendered me incapable of action for nearly two days. I will forbear to give the names of the makers of these, although they deserve to be denounced. The traveller will be better off if he shuns preserved goods. A diet of rice, potatoes, and the various other native products of the country he passes through are preferable to the tinned abominations of commerce. Tinned milk, and meat extracts, such as "Liebigs" or "Bovril," are the only preserves which, apparently, can be used without evil effect, and it is essential to carry them. Fresh meat can generally be obtained; and I have often carried a slaughtered sheep on the top of the baggage mule's burden, cutting pieces off when necessary. Fowls can be bargained for at wayside places; and if the inhabitants are too obdurately of the *No hay* stamp and refuse to sell, there is always the time-honoured remedy, if one is too near starving—which sometimes happens—of knocking the bird over with a stone, and then saying, "Señora, what is the price of your fowl?" I have not employed this method exactly, although I have observed it mentioned in books of travel dealing with South America.

But I did once play an old trick on a community of the *No hay* type—for whose invention I am not responsible, as it is based on an anecdote known to South American travellers. Arriving one evening at a place of the *No hay* description, with empty saddle-bags, I petitioned the inhabitants for rice, potatoes, fowl, or anything wherewith to make some soup. Useless; they would not part with anything, either for love or money; so I bid my servant collect and wash a dozen small, smooth stones. A pot of water had been put on the fire, and—in the presence of several of the villagers who had collected there—I carefully placed the stones therein. When the contents boiled I stirred it vigorously; and ordering my servant to pour out the "soup," partook thereof with manifest relish, whilst the persons present who stood

around, gazed with wondering eyes at this curious performance. "You see," I said, "I am able to dispense with you people's miserable attentions. Behold and taste this excellent *sopa de piedras* (soup of stones)"—and, suiting the action to the words, I ladled out a cupful and handed it round. The Indians smelt and tasted, and found the mixture excellent, especially with the addition of a little salt and pepper. After concluding my meal, I ostentatiously ordered the stones to be thrown away, and retired into my tent, from an aperture of which I watched the Indians surreptitiously collect them again, and depart to their houses, with the object—as I well knew—of endeavouring to make more of the excellent soup for themselves and their families! But it transpired that, notwithstanding that they boiled and stirred them vigorously, the water remained clear, and the soup refused to materialise! I did not find it necessary to inform them that at the moment of stirring I had surreptitiously let fall into the pot the contents of a jar of "Liebig's Extract of Beef"! And to this day the people of that place speak of the marvellous *sopa de piedras*, of which they partook.

It was during this expedition that I experienced several narrow escapes of disaster. Our way lay across some of the vast swamps which are encountered on the high table-lands of the Andes, and my guide somehow got us right into the middle of one of these, on to a species of island of unstable matter. There we remained a moment, seeking the way out, whilst the whole "island" slowly began to sink beneath the weight of the mules. One of the pack-mules, loaded with heavy sacks of mineral samples, broke through the crust and began to sink, the poor beast making frantic endeavours to flounder on towards a rocky promontory some few hundred yards away. But its efforts seemed futile; it sank deeper at every struggle, and was already up to its knees in the ooze. Dismounting for an instant, I cut the ropes which held its pack, and the sacks soon disappeared below the surface. It seemed that we might all share their fate, for the whole crust of the

"island" was becoming submerged; the black ooze slowly rising all around. Action was necessary. "Seek a way out at all hazards," I said to the guide; and that individual, who was, fortunately, accustomed to pass these swamps, applied the spurs to his beast, and leaped towards another island similar to that on which we were, for there existed a series of such at varying distances apart. The guide's mule landed with his fore-feet on the firm part and his hind-legs in the treacherous mud. A few inches less and he would have been lost, but the animal scrambled up and regained its footing. It was my turn now. It was a long leap from such insecure footing. Between, lay the chasm of ooze of unknown depth; but it was useless to ponder. I drove my spurs into the flanks of my mule—the same good beast I have before described—and he responded nobly, although trembling in every limb with fear and apprehension, for he knew perfectly well the risk he ran. But like a deer he bounded over, and we landed in the middle of the island. There remained now my servant and the other pack-mule. A *riata* was thrown across, and the latter, by dint of pulling in front and whipping behind, essayed the leap and passed safely. As for the servant, the beast he rode absolutely declined to leap, and the poor fellow protested that he should die there. We could not waste time; our second island was sinking also. An idea occurred to myself and the guide simultaneously—a *riata* was again thrown across, and my mule made to leap back; the Indian mounted it, leaped safely over the abyss, and his own beast, seized with that inevitable panic of being left alone in danger, which ever attacks animals, as it does men of weaker spirit—followed, missed, plunged into the mire, and was only saved from death by the most strenuous efforts on our part.

Meanwhile, the weight on our new refuge had caused it to begin to settle down considerably. But Nature had disposed a series of smaller islands between us and the rocky promontory, and in trembling and apprehension we leaped our beasts from one to the other, landing on the quartzite strata of *terra firma*.

I know of no situation so trying, as the foregoing, of passing these swamps. With tight hand on the bridle; spur ready against the flanks of the beast; momentarily expecting to be plunged into unknown depths of ooze; the animal trembling and snorting with apprehension; essaying and not finding footing; and then the leap, and—safety! The mental strain is very severe, to say nothing of the physical effort.

As for the other mule, it endeavoured to struggle towards us, sinking deeper and deeper. Notwithstanding the pity I felt for the poor beast, nothing we could do would save it, and we should only have uselessly risked our own lives. The guide suggested shooting it, with a carbine, from the bank; but this I forbade, desirous to give it a last chance of floundering out. We were obliged to push on to water and fodder.

It might have been supposed that the day's dangers were now past, but fortune seemed determined to frown upon us still. Having left the swamps behind, the trail wound along a steep hillside, and entered upon the face of a precipice formed of loose and sliding shale, which terminated in a roaring torrent hundreds of feet below. The track or path had been narrowed by the rains and landslips to a width which rendered passage perilous, but—saving the way across the swamp—there was no other route. I had found that my own mule had strained a leg somewhat in the leaping before described, and I had exchanged it for that which my servant had ridden, whilst he mounted the pack-mule. As we were proceeding along the path, with the mule, after the manner of his kind—which seems to prefer the outer edge of a precipice to the inner—walking along with my left leg hanging over the abyss, I suddenly felt his hind-quarters giving way. Now, I am ever prepared for this in such places, and always ride with the outside foot loose in the stirrup, ready for instant dismounting. The habit served me in good stead. In less time than it takes to relate, I had swung from the saddle, as the mule went over the precipice, a part of the road going

with him, and leaving me insecurely poised on a narrow ledge of rock. I retained the long bridle in my hand, instinctively; and as the mule slid slowly downwards amid the *débris*, I endeavoured to stay him by pulling gently, hoping he might regain a footing on some rocky prominence. It was useless. The bridle strained to breaking, and pulled me towards the verge. I must let go, or be dragged to destruction. I loosed it. The animal turned with the pressure of the sliding earth; rolled over and over with gathering impetus amid the shouts of my men, who were in front, and were witnessing the occurrence; gave a final somersault and disappeared from view. A second later a loud splash in the water below announced its fall, and I discerned its body being fast carried away by the whirlpools.

I looked around, and only then observed that I was a prisoner on that rocky ledge. The road, both in front and behind, had fallen away; above me was a sheer rock-face; below, the loose earth and shale still poured gently downwards towards that fatal verge. What if I were to slip? A vertigo seized me. I clutched the rock. Ha!—was I slipping in reality? I took a last glance at the sky and cliff overhead, my eyes closed—and . . .

The tent was comfortably pitched in a green hollow by a clear, trickling stream; and whilst I lie at ease on my camp-bed after supper, with coffee and cigarettes at hand, and my men smoking contentedly outside by the fire, I will apologise, kind reader, if I have harrowed your feelings in my narration of these truthful chronicles. I did not fall. I conquered the vertigo by an effort of will; took a running jump, passed the chasm between me and the road, and landed safely, and am now as comfortable here as you in your armchair. And my contentment was increased when towards nightfall my men informed me that the mule, lost in the swamp, had arrived. Doubtless it had by good chance struggled to a rocky bottom and emerged, finding its way, with the sagacity of its kind, towards our camp.

The sun set; the day stars' course was done. Above the faint purple of the distant hills the glorious rays were flung upwards towards that calm and softly-glowing vault of sky o'erhead, and soon, "heaven spread some silent stars, to shew mortals the way thither." The far horizon —that horizon that day by day beckoned me, that called me on, as the horizon shall ever call until these days are done—took on the purple tints of peaceful night; the reprieve of action; the legal rest of Nature and of Man. And here let me ask you, kind reader, to recollect with me how slight is the distance, how unexpected the moment, which separates plenty from famine, security from danger, life from death! In the morning the traveller may be in the midst of flocks, herds, and plantations; at nightfall upon the bleak plateau, with empty saddle-bags and hunger at his vitals. At one moment he treads the firm highway; the sun goes down, and a gloomy precipice yawns before his erring feet. Now his heart beats high in response to the call of Nature and action; anon he lies, stricken by accident or disaster within the gates of death! Truly there must beat within his breast the spirit of the real traveller — the traveller through the abstract as well as the material world; the spirit which brings him forth from the mire and sets his feet upon a rock; which yields him a table in the wilderness, and which knows not death because it neither courts, nor fears the King of Terrors!

SUMMIT OF THE ANDES: PASS OF YANASHALLAS.
Sketched on the spot by the Author.

CHAPTER VII

THE UPPER MARAÑON[1]

TOWARDS the end of March, 1904, I returned to Huaraz from an expedition to the Upper Marañon, and the region bordering thereon. The primary object of my journey was to examine and take possession of some gold and quicksilver-bearing concessions, which I had acquired previously; but in addition I wished to study, as far as time would permit, the geological conditions of the district, as well as to gain some knowledge of the ways of the natives, and to visit some of the numerous Inca ruins which exist there.

I have accomplished the journey from Huaraz to Chavin in one day; but it is a very hard day's ride. The distance is only about 14 leagues, but the main range of the Andes has to be passed midway; and from Huaraz the trail rises from about 9,930 to 15,350 feet —the summit of the Pass of Yanashallas—and descends again to 10,500 feet at Chavin: a steep and trying "road," where the horseman is generally pelted for hours with driving snow, and chastised with the bitter blast.

Beneath this summit, by means of a tunnel, would pass a portion of the projected Pan-American railway according to a reconnaissance made some years ago.

Although the summit of the pass is above the perpetual snow-line, it is a rather remarkable fact that the snow-cap does not cover the road, notwithstanding that it lies on either hand at a distance of a few hundred metres. I have been informed by the natives that the snow-cap existed here formerly, but that "the snow disappears always from the immediate vicinity when there is continued traffic"; presumably due to the continued

[1] Read before the Royal Geographical Society.

presence of living beings. Whether this hypothesis is well formed or not, I am not prepared to say; but it is to be noted that the same circumstance has taken place in other passes which cross the same range—for example, that of Huarapasca, some leagues to the south, and which I speak of later.

The formation here is quartzite, which stands up in enormous vertical strata; and lower down numerous small lakes occur, generally presenting the appearance of having been artificially dammed up by embankments, which are really moraines left by the retiring snow-cap. In this connection it may be observed, that, according to the observations of the people of the region, the perpetual snow-cap has retired and diminished very notably during last century—at least upon this portion of the Andes.

I have again to confess that the photographs taken here were not a success, and I must have recourse to my note-book for sketches of the formation.

Nearing the summit these roads are sometimes formed by a series of rude steps excavated in the rock, or filled up of flat slabs of stone, made originally by the Incas.[1] In the background on this particular summit are peaks of pronounced and curious form, and the contrast of the marked stratification of the rock and the dazzling surface of the snow is striking. They are veritable "pinnacles"—the termination of Andean towers, naves, and aisles—and mark the edge of stable matter where it penetrates the empyrean.

The lake-formation near the summits is interesting as showing the probable origin of springs in regions below, the thawed snow entering the lines of stratification of the vertical strata, and being conducted thence.

These appalling ramparts of nature tower heavenwards at all angles, and frown down upon the way in stern rigidity. An idea of their structure will be gained from the sketch. The two small lakes shown in the illustration are exactly at the summit: the water-parting of the

[1] See page 239.

Cholo Policemen and Horse Thieves, Recuay.

continent. On the left side — the east — the waters of the melting snow gather in streams, and descend to the tributaries of the Marañon, finding their outlet—1,000 leagues away—by the Amazon upon the Atlantic coast. On the right-hand side they flow to the River Santa, and debouch at Chimbote in the Pacific Ocean.

At the foot of the Cordillera exist some thermal springs, which the inhabitants of the village of "Olleros" use—very occasionally, I suspect, judging from the appearance of the latter — as baths. This village is on the western side, and is chiefly famous, or rather infamous, for its cattle and horse thieves. I had the satisfaction of seeing some of these individuals taken into custody, and as types of Indian robbers I append their photographs. Many a sleepless night have the Indian horse thieves caused me and my men in the trails of the interior, necessitating constant vigilance to avoid the robbery of our animals.

In some of the views it is observed that wooden crosses are placed at the summits, and, in fact, the sacred emblem is in evidence in Peru, even in the most inaccessible places, as indeed it is throughout Mexico, and Spanish-America generally. Whether it be to indicate a summit, to mark the leagues on a mountain road, the position of a spring or well, or to hold in reverence the wayside spot where some tragedy has occurred—for it is used for all these purposes—the devout Indian has not failed to preserve it there, where in silent sentiment it confronts the view, and from the chance wayfarer—

"Implores the passing tribute of a sigh!"

and no hand, however ruthless, thinks to disturb it.

The town of Huantar, where I arrived, is some leagues down the valley of Chavin on the river Poccha, a tributary of the Marañon. I took there some views of the place: a group of Indian women getting water at the well, and having their photographs taken for the first time in their lives!

This out-of-the-world town of Huantar is one of the

most primitive places that can be imagined; the chief feature about the inhabitants is the prevailing deformity known as *Coto*, or technically *Bocio*, and consists of an enormous double swelling of the neck, which hangs down like great pouches. This strikes pity and disgust to the mind of the traveller, especially when it is known that the disease has its remedy in the use of iodine, and results from negligence and lack of initiative on the part of the better members of the community. Here is a field for a self-denying doctor, who would sacrifice himself to dwell among these poor and backward inhabitants of this district!

Near this town are numerous ruined habitations and fortresses of the "Gentiles," as the present inhabitants of Peru term the ancient Quechua and Inca dwellers of the country; and in the quartzite formation are numerous silver and silver-lead mines, which, however, are scarcely worked by the modern inhabitants. Some veins of bismuth are encountered near here; coal also occurs. The name of this town is derived, I was informed there, from a corruption of the Spanish words *Aguantar o' Reventar*, meaning literally, "Suffer, or burst!" — this having been formerly the mandate of the Spaniards in that neighbourhood, who forced the Indians to abandon their dwellings in the almost inaccessible hills, and to form a town on the plain below, the actual site of Huantar.

At the foot of the Cordillera is the castle of Chavin. These ruins are of much interest, and worthy of more study. They are quite extensive, principally subterranean, and have been built of squared stones carefully set. I had but little time to examine these ruins, intending to return later. The portion I examined consists of a series of small, square, underground chambers, communicating with each other by passages, and also by curious small horizontal galleries, not large enough to admit the body of a man. It is stated that below these chambers exists a similar series; and certainly upon looking down a hole which had been made, accidentally or by design, in one of the passages, a space or chamber was observed. It

Inca Bridge at Chavin.

is difficult to know what purpose these apartments served; possibly they were dungeons. In one of the passages is a stone column with characteristic Inca scroll carving upon it, circular in form — a monolith of considerable size. Some time ago efforts were made to extract this stone, but it was found that it penetrated the ceiling of the passage above, and extended downwards, and absolutely could not be moved. In the park of the Exhibition in Lima is a large carved stone, which was taken from these ruins and conveyed thither, and of which I give an illustration. This stone is about 7 feet in height.

I repeat that these ruins are worthy of further examination; and some work and excavation would undoubtedly disclose matters of interest, and possibly unearth some treasure. The view given is part of the exterior.[1]

Close to the castle is a bridge, which was built by the Incas, spanning a stream which descends from the Cordillera. The principal feature of this structure is that the floor is composed of single slabs of stone, about 15 feet in length. The four pillars at the corners are modern, and the carved stone heads built therein were taken from one of the subterranean chambers of the castle, and are good examples of Inca carved grotesque heads.

In Huantar I lodged as the guest of the gobernador, the petty authority of the place. I there observed the method by which the Indians make their complaints, or "state the case" in any question they may have to lay before him. Before presenting themselves, they arrange the formula in which the plaint is to be delivered, concocting certain phrases which they deliver, all in a monotone, reiterating the phrases without any pause. This in the Quechua language; and it lasts some ten or fifteen minutes, during which the gobernador listens patiently and judicially, and then announces his decision.

The complainants may, for example, have come to supplicate for the release of some friend or relative who

[1] See page 241.

Carved Inca Stone from Chavin.

To describe the remarkable customs and superstitions of these poor and backward people on the eastern side of the Andes would occupy too much time and space. They inspire me with pity—

> "Knowledge to their eyes her ample page;
> Rich with the spoils of time"—

unrolls so infinitely slow for them. They have the weight of centuries upon them; dragged down by the chain of deadly ignorance — inheritance of the methods of their Iberian conquerors.

I now left the cold and inhospitable plateaux of the Andes, and planted my tent on a green meadow where the Marañon rolls by, where the warm rays of the sun fell comfortingly upon us, drying our clothes and bedding, damp and heavy from days of rain and snow.

The famous river at this point is small, and resembles rather an English river; whilst overhead are the azure areas and cumulous cloud-masses of a "Devonshire" sky. The valley slopes are cultivated with maize and potatoes; and numerous villages on the banks, with their white walls and red-tiled roofs, give, at a distance, an air of smiling prosperity. This latter characteristic, however, vanishes somewhat upon entering the streets, when the poor and primitive method of living of the inhabitants becomes evident.

I have passed in succession the towns of San Marcos, Puntou, Punchao; the village and bridge of Chuquibamba, above which the first view of the Marañon is obtained, Chavin de Pariaca, Tantamayo, Yanas, Pachas, Ovas, Silyapata, and others whose names and altitudes are recorded in my note-book.

All these towns, or rather villages, are more or less of a similar type. They consist generally of a small *plaza*, or public square, with the temple on one side, and the streets set out squarely after the usual Spanish-American style, which is too well known to require description. Here the houses are of *tapiales*, a construction in which the earth, wet, is rammed in between

planks set upright, so forming walls, after the style of concrete construction. The roofs are high-pitched, and covered with pan-tiles, or thatched with grass.

The bridge of Chuquibamba is on the road to the Montaña, or tropical interior of the country. This little bridge is a primitive affair formed of logs covered with twigs and soil, before entering upon which the prudent traveller will alight, lest the horse or mule he bestrides breaks through the fragile covering with its hoofs. The altitude of the river at this point is about 9,100 feet above sea-level. The climate is generally mild, and might be compared to that of the south of England. The width of the river is generally about 100 feet here, but at the bridge narrows between the rock, outcropping to a few yards; the channel, however, being correspondingly deep, as shown by the view on a previous page, which also shows the method of bridging by corbelling out from the abutments to reduce the span, which might be described as a species of rude cantilever. The flow of the current is swift at this point, and I was nearly carried away on one occasion whilst swimming in a pool above the bridge. The flow or volume, according to my gauging in January, was approximately 300 cubic feet per second.

The river is famous at this point for the occurrence of gold in its bed. In fact, the principal occupation of a number of Indians here is that of gold-washing or extraction, both by men and women. I have, personally, obtained gold-dust and small nuggets from the gravel at the verge, and a portion of my concession covers this part of the river. I have purchased from the Indians, on several occasions, nuggets of gold weighing up to half an ounce, and quantities of dust, and there is not the least doubt that wealth is contained here. Below the bridge the river widens out into a species of whirlpool, which, according to the Indians, contains a vast quantity of gold, deposited by the current. Years ago some persons endeavoured to examine the bed here by means of a diving-suit, and, I am informed, but have not

THE MONTAÑA: COCAINE FACTORY OF MONZON.

P. 77.

been able to vouch for the truth of the rumour, that one of them perished beneath the waters.

The geological formation of the valley of the Marañon, in this region, is a talcose slate, occurring in thin bands alternately with quartz, the latter generally stained with limonite. The formation has been much twisted, folded, and contorted, probably by "end pressure," and the quartz is probably an "after deposition" between the laminæ. On the western summit of the river-valley is a capping of white sandstone, and on the eastern of red slate-quartz conglomerate. The river-level is 5,000 to 6,000 feet below the summits of the valley, in vertical altitude. There are numerous deposits of gold-bearing gravel and conglomerate laid down at previous epochs above the present river-level. Some of these have been worked by the Indians, by means of tunnels.

The photograph shows the bridge and river-valley slopes looking northwards, and might almost be taken for a view upon a Devonshire river.

Leaving the Marañon, I proceeded eastwards towards the Montaña, arriving at the lakes of Carpa, only a few miles from the tropical region of Monson, where there exist several factories for the production of cocaine.

The view shows one of these places, where the alkaloid, about 85 per cent. pure cocaine, is extracted from the *coca* plant, or shrub, which flourishes there in abundance. The altitude is 5,300 feet above sea-level.

The lakes of Carpa are very picturesque, and of some considerable size; the altitude is 11,500 feet.

In the neighbourhood of the village of Tantamayo, about 4 leagues from Chuquibamba, are numerous old Inca ruins. In fact, all along the road from that point to the village mentioned, are the remains of the fortresses and structures of these ancient people, crowning almost every hill. Opposite Tantamayo is a remarkable row of square towers on the summit of a hill; and as I passed they stood outlined against the evening sky, weird and romantic in their almost inaccessible abandonment. A little further on the ruined walls and towers of a

whole ancient village presents to view at a turn of the road, massed on a sombre ridge on the opposite side of the valley. Above rolled the sombre night-clouds; below rolled the folds of mist which arose from the Marañon; 6,500 feet below, the white, fleecy mist which only the midday sun dispels:

"Slow lingering up the hills like living things."

Near at hand a ruined castle stands, such as might have appeared to the lonely watcher in "the valley of St John," where Triermain hurled his axe. Strange and romantic are the situations of these old structures.

In the gorge to the left hand runs the Marañon, far below. The view is exceedingly picturesque at evening, but I am unable to do it justice in the sketch made in passing, intended only to supplement the photographs—as to colours—which were spoilt afterwards. However, an idea may be formed of the remarkable position in which these edifices were constructed, and the very considerable altitude at which their inhabitants dwelt. Judging from these ruins, it would seem that these people dwelt in constant fear of attack; and, in fact, it is well known that the population consisted of numerous divided tribes, who constantly made war upon each other. I have discussed this in the chapter dealing with the Incas.

Some of the above ruins are nearly 16,500 feet above sea-level, and the clouds are actually both above and below them — a situation which is almost appalling. Notwithstanding their altitude, however, there is no perpetual snow in these situations, and the hill-slopes have at one time been cultivated, as shown by the remains of the *Andenes*, or old cultivated terraces.

There is nothing which arrests the attention of the traveller in the Andes more than the peculiar aspect which these interminable slopes present, due to this anterior cultivation. At first sight he is unable to explain the remarkable "rippled" appearance, until he sees that it is the result of innumerable terraces, which have previously been small plantations or fields partly

THE UPPER MARAÑON: RUINED INCA CASTLE.
Sketched on the spot by the Author.

excavated on the upper, and embanked on the lower side. These *andenes*, as they are termed, have given rise, it is sometimes supposed, to the name by which the Cordillera of South America is designated—the Andes; although there is another derivation from the Quechua word *antes*, or mineral. Moreover, the evidence of a very large anterior population is ever before the traveller, in that in some of these extensive regions every possible square foot of ground is so terraced, and has been at one time cultivated, however inaccessible it may appear to be. Also, the very extensive ruins of habitations bear witness to a numerous people, whose customs and methods seem to have been subordinated to the rules of some absolute, yet apparently prosperous monarchy, or other individual ruler.

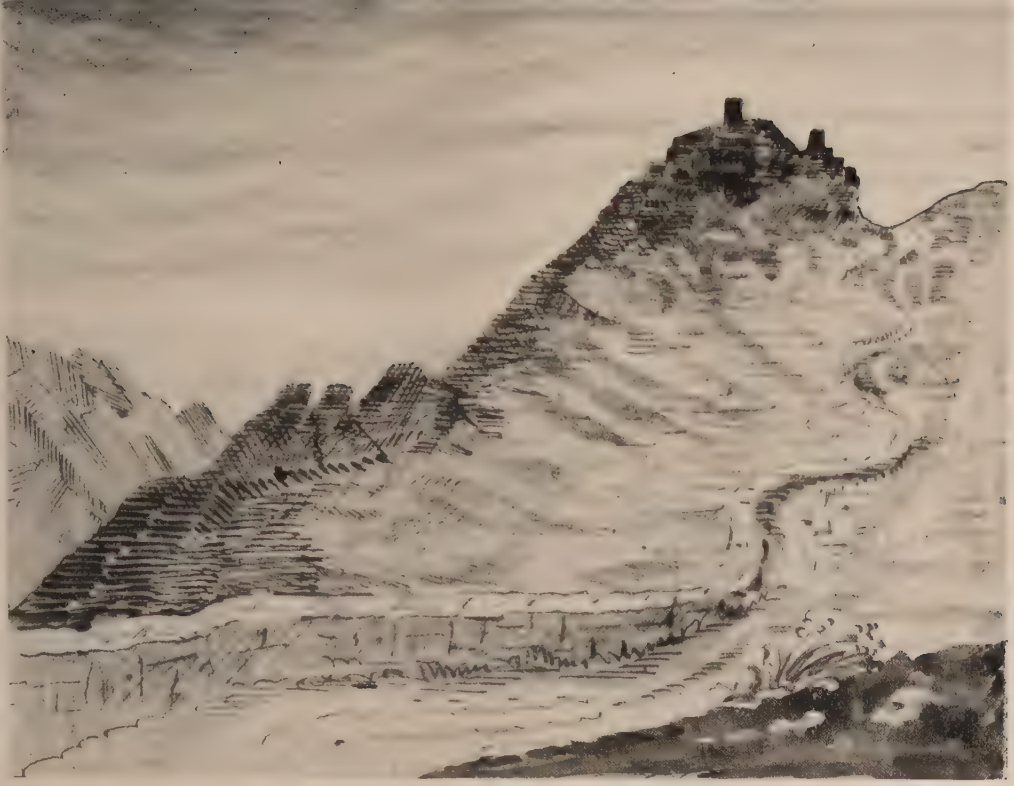
These extensive remains scarcely excite the notice of the present native inhabitant of the country. When questioned as to their age or purpose, he simply replies that they are "*Casas de los Gentiles*" ("Houses of the Gentiles"), which is the extent of his archæological knowledge. He does not even search or excavate in the hope of finding buried treasure, for superstition so bids him reverence these ancient dwelling-places that he almost fears to enter them, and fear, combined with lack of initiative, operates against any exploration. Unfortunately, however, in some cases he pulls down the stones to form *corrals*, or enclosures, for his cattle.

The river is so far below that, notwithstanding the roar of its torrential passage, only the faintest murmur of its voice reaches these "cloud-capped towers" above it, and indeed, at times, not even the faintest whisper breaks the solitude. Far away, to where they are lost in the earth's curvature, arise the summits of these endless mountains, whose successive peaks and ranges develop their limitless and silent geometry[1] to the eye. The fading day rests lingeringly upon them, tinting them in subdued

[1] Mountain ranges seen from above present views of cones and solid intersecting with planes.

colours, to where, in an indistinguishable haze, the realm of distance and of darkness renders all invisible. The night descends as I watch from where my tent is pitched; the scene is blotted out, and—

> "Like an unsubstantial pageant, faded,
> Leaves not a wrack behind!"



THE UPPER MARAÑON: AN INCA FORTRESS.
Sketched on the spot by the Author.

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CHAPTER VIII

REGION OF THE UPPER MARAÑON[1]

THE changes of climate are quite marked in one day's journey even, in the Peruvian interior; the traveller may, during the early morning, be among the inclement climatic conditions of the high *puna*, or uplands, whilst the afternoon sun may find him where oranges and lemons grow.

At the general altitude of 10,000 to 13,500 feet a flora very similar to that of the south of England is encountered, and I extract from my note-book—almost illegible from being written on mule-back as I journeyed along slowly, waiting for my lagging muleteers — the following notes:

"It would be difficult to find a place more like Devonshire than some of these uplands. Here are the same hills and streams, the same moist, soft, cold atmosphere; the vales of mist and rushing streams of distant Dartmoor, except that these come from eternal snows above. Here are ferns and nettles, fields carpeted with buttercups in bloom, and deep in mossy bank and beneath grey stone walls are violets and stitchwort. I see no well-known furze, or gorse, but the hartstongue fern is here, and high heads of yellow mustard are in bloom. The little plantations of potatoes might belong to a Devonshire moorland farm, and the dandelions to the border of her country roads. The 'cock's shrill clarion' sounds from the straw-thatched cottages, and cattle are browsing knee-deep in the meadows. But there is snow behind the grey quartzite blocks on either hand, from yesterday's storm upon the Cordillera, and — strange contrast — clumps of blue lupinus raise their heavy azure heads along the edges of the fields—often beneath the shadow of the mountain ash."

[1] Read before the Royal Geographical Society.

And here, as on Dartmoor, are the megalithic remains of prehistoric man.

But there is little timber; the *quinual* and *quishua* trees are those which principally predominate, and the eucalyptus, transplanted from Australia, is encountered in many places; some are to be observed at Tantamayo as also at Huaraz.

Continuing my journey I arrive at the town of Aguamiro, on the river Vizcarra, which is a branch of the Marañon, where both men and beasts halt for a few days' well-earned rest.

The Marañon divides near the town of Pachas, one branch descending from the south, and the other from the south-west. The former is the Marañon proper, and at this point is only about 50 miles from its source—Lake Lauricocha. The latter is termed the *Vizcarra*, and has its origin in the Cordillera of the Andes, near Huarapasca.

At the discussion upon my paper, read before the Royal Geographical Society, it was objected that this lake is not the true source of the Marañon. I meant it in a general sense; it is true that there is an entering stream which comes from the Cordillera some small distance away, which may be considered to be the further source.

After leaving the town—the head of the province—of Aguamiro, upon the Vizcarra, I arrived at Huallanca—a small place, which is of growing importance, due to mining development and enterprise. In this neighbourhood are extensive deposits of anthracite coal in the quartzite formation, which in some near future time must cause this region to become important. A smelting works has been established, as the ores of copper, silver, lead, zinc, etc., are abundant. The coal formations are very marked, and in many cases stand vertically within their enclosing strata, which latter has been upheaved and distorted. The coal seams tower up to a height of hundreds of yards above the river; and from their topographical formation would lend themselves to economical mining methods.

Undoubtedly, Peru should some day become an important coal-producing country—when the railways are increased, and tap the coal-fields.

Leaving the Vizcarra on the west, near its headquarters, I arrived within a short distance of my objective point, Chonta, when a fierce snowstorm overtook us, and caused us to lose the track. On many of these mountain uplands, or *punas*, interminable swamps exist, such as previously described; and across some of these we floundered for hours, nearly losing, on several occasions, some of the pack animals. One of these almost disappeared with its load in a treacherous place, and was only saved by superhuman exertions. Shortly afterwards another, in crossing a bog, went down, and in struggling overturned its load of provisions and utensils. Freeing itself partly, the animal bolted, dragging after it its burden, and disappeared, in spite of our efforts to stop it, around the base of a hill. Whilst the muleteer pursued it, I rode over the track "locating" the utensils, such as pots, the frying-pan, cups, spoons, packets of flour, sugar, and coffee, and divers such articles, which were strewn among the snow. Night was upon us; there were no habitations and no fuel in the vicinity, for the only combustible in the high *punas* is the dried grass. There was nothing for it but to face circumstances as they were, and I gave the order to clear a space from the snow, and plant the tent. The altitude was nearly 16,000 feet—something like 3 miles vertically above sea-level! The icy blast blew through and through us, and the water poured in beneath the bottom edge of the canvas. Just previous to this my mule had slipped and fallen, rolling on to me, not doing me more injury, however, than that of a broken finger: the pain of which by no means detracted from the discomfort which I experienced.

But the traveller who has chosen the winter-time for his travels in the Andes—against the advice of his friends—must make light of the consequences; and I ordered a trench to be dug on the upper side of the tent, which prevented the water entering and further wetting the

bedding, etc.; whilst the snow shortly covered the canvas to a depth of a foot, and afforded protection from the cold. A small alcohol lamp which I carried for emergencies afforded the means of making coffee, and I was able to obtain a few hours' sleep; my only preoccupation being for the unfortunate mules, who, exposed to the gale, found but little fodder for the depth of snow.

My three Cholos, who had been my only companions during this arduous expedition, resisted uncomplainingly the hardships they were called upon to suffer. Wet to the skin, and exhausted with the pursuit and capture of the mule, they, nevertheless, put forth every effort towards securing the comfort of their "patron"; for I have always been fortunate in being able to attach these faithful fellows to me by methods of kindness and strict justice towards them.

On the following day the sun shone brightly, and my hardships were forgotten. I examined my concession at Chonta, which embraces a large area of cinnabar-bearing formation, and may prove to be an important quicksilver mine.

The altitude of this place is 14,680 feet, and is stated by Raimondi, in his work published in 1874, to be "one of the highest inhabited places on the globe." The mines were first discovered in 1756, due to an order by the Crown of Spain for the search for new quicksilver mines, and in the past have produced a good deal of this metal. At present they are almost abandoned.

From Chonta I obtained a view of the hills which bound Lake Lauricocha—the source of the Marañon—only 20 miles distant from where I stood; and on the south-west arises a magnificent series of snow-capped peaks, whose name I was unable to obtain. I could not sleep here during several nights, due, not so much to the cold, as to the exceeding rarefaction of the atmosphere. The organs which are affected, however—the heart, the lungs, the brain—soon accustom themselves to their environment.

It was a source of regret to me that I was unable to

arrive actually at the lake; but it was impossible. Some of my men were worn out with constant exposure, and ill with *tercianas*, or intermittent fever, for we had been out for many weeks, and they could no longer endure these high altitudes. The mules were not in a condition to pass the swamps between us and the lakes; for the roads, due to the exceptionally rainy season, had become converted into such; and the only fit member of the party was now myself. However, I had performed my work in the region — the inspection of the mines — in spite of the weather; and in the proper season these difficulties do not occur. But I beheld the blue hills above the lake as a sort of "promised land," to which I had been denied admission.

From this point I began my return journey to Huaraz, passing the summit of the Andes again at another point —the Pass of "Huarapasca"; altitude, 15,760 feet. The end of March was approaching; and the expiring winter seemed bent upon expending its last fury upon the head of the traveller who had defied it in its stronghold. For eight long hours, as I passed the summit, the wind and snow and sleet came out of the west in long, horizontal lines, converging, apparently, upon the track where I descended. For eight long hours we plodded on without once descending from the saddle, except near the summit, to rearrange the pack-mules' burdens. Between those tearing tempest-clouds the sun flashed out for one brief moment, lighting up that labyrinthine wilderness of eternal snows — the roof of the world — and flinging strange shadows upon the appalling terraces of that vast solitude.

But the moment was sufficient, and I was able to take some instantaneous views, and which show something of that high environment.

It was but a brief pardon. The thunder-clouds gathered in front: the lines of descending snow increased again their vigour, and the winter lightning flashed The gathering volume of the stream in front of me, which formed the "road," hissed angrily as it brushed

aside the pebbles in its path. The scene was changed again:

> "And such a change:
> Oh! night and darkness, thou art wondrous strong!"

for the Andean night closed in, and the weary pack-mules could scarcely advance. A shepherd's cottage—incredible that these people live at such an altitude—gave shelter at length, and permitted the preparation of some "breakfast"; for it was the first meal of which we had been able to partake.

But I could not sleep. The cold and the rumbling of the avalanches on the peaks behind the "house" drove sleep away.

At 5 A.M. I stood outside the wretched hovel. Will the morning never come? The cold is intense; the breeze freezes my finger-tips and ears, and scarcely the faintest gleam comes from the snow beyond. Will "the dayspring from on high" never visit us? It comes as I stand there! In the east a faint light appears through the driving snow, and from behind a distant hill a tearing veil of cloud makes way for a lake of blue, and in an instant closes again as if reluctant to release the firmament from its dun dominion. Will day never dawn? Again the icy breeze blows past, and I feel faint for lack of food and sleep. "Get up, lazy animals, and make my coffee!" This to the sleeping Cholos, who roll over and arise.

At last the day. I do not wonder that the ancient Incas worshipped the sun. A beam shoots upwards—the arm of the sun-god—a sunbeam, and banishes the hungry clouds of night. It grasps the veil of darkness and hurls it aside; the mists roll off down the valley; the eternal snow upon the everlasting peaks fast tinges with a rosy light; the tint is reflected, is flung into the western sky; a bird twitters among the grass and snow. It is day!

We journey onward and downward. The formation is a limestone, and I halt for a moment to sketch a huge fossil ammonite, which stands facing the road like

SHEPHERD'S COTTAGE IN THE ANDES.
Sketched on the spot by the Author.

a stone carved with an Inca scroll, shown in a previous chapter.

The number of these fossils at this point is remarkable; they stand in rows like an arrested and petrified "school," in a marked vertical strata, or series of strata, which run north and south. Their diameter, or at least of that I measured, was 80 centimetres, or say 32 inches, across the curved portion. The nucleus, or central portion, appears to be better preserved than the rest; and hundreds of these centres, in the form of flattened spheres, strew the track across the formation.

Still we descend, and the streams now flow westward, carrying their *débris* to the Pacific Ocean. The traveller is witnessing in these heavy storms the formation of new "horizons," and, relatively of course, the Andes are being worn away before his eyes. The head of a valley is reached, and I am tempted to sketch some of the natural "reservoirs" or lakes: the remarkable symmetry of whose enclosing moraines seems the work of man in an artificial embankment. Some of these are 50 metres high.

There are three Cordilleras to be passed by this route —that is to say, three "undulations" of the Cordillera; and after two days' riding we descend to the plain, or *pampa*, of Lampas. This plain, which is of some 10 leagues broad, is remarkable for its exceeding flatness; stretching away before the view of the traveller to where its horizon line cuts the base of the hills which bound it. It is of a gravel formation — partly auriferous. On its south-westerly side is Lake Conococha, which, doubtless, covered it at a former epoch, and is the source of the river Santa, which, as elsewhere described, flows north-westerly to the Pacific Ocean, down the valley of Huaylas. The hills above this lake are of somewhat remarkable forms of volcanic rock, and various metalliferous ores are found there. The altitude of this plain and lake is 13,200 feet.

From this point to Huaraz the road follows the verge of the river, a distance of about 16 leagues, passing the towns, respectively, of Ticapampa and Recuay, where a

good deal of mining—principally silver ores—is carried on. The river was in flood below the lake where we passed, and one of the mules was nearly carried away.

A survey has been made for a railway along this valley to Chimbote on the coast, and its construction would greatly benefit the region.

The buildings and towers of Huaraz, as I approached the city, seemed, after the primitive places where I had sojourned, to form a "grand metropolis": such is the effect of comparison. The photograph gives an excellent idea of the city seen from afar. I was glad to arrive. I was weary of battling with the elements; my mules were in need of rest and good fodder, my men anxious to be with their families. My spurs were worn down to the rowels, and my india-rubber cape absolutely rotten with continual wettings; and the prospect of a comfortable bed, clean surroundings and good food, and other usual adjuncts of civilised man, were most alluring.

City of Huaráz and part of the "Cordillera Blanca."

CHAPTER IX

LIFE IN THE CITIES OF THE ANDES

WHAT are the conditions of ordinary life and its surroundings in these remote mountain regions, it might be asked? What impression is formed in the mind of the European traveller? What idea of "Americanism" will he gather from his observations of them? It is a difficult task to sum them up, or to decide what is their meaning—their part in the scheme of things, except to say that they form a community in process of development; an *aggrupacion* of dwellers, at present ill-connected, with its destiny still vague and shadowy, yet not without promise.

Let me lightly describe some of these places, and the people who inhabit them, and you may form your own opinion, good reader, upon what are more or less exact observations and descriptions.

Very typical parts of Peru, as regards regions of the Sierra, are the communities described in another chapter, lying at elevations of about 8,000 feet to about 13,000 feet above sea-level: such cities as Arequipa, Huaraz, Cajamarca, etc.

The valley of Huaylas, of which I have made mention, and in which Huaraz is situated, is a remarkable longitudinal valley of the Andes, running parallel with the general axis of the range, about N.N.W. Its length is about 100 miles, its width varies from 1 to 5 miles, and it is bounded on both sides by the high ranges of the Cordillera. That on the eastern side is known as the "White Cordillera," from its snow-cap, as described else-

where; and that on the west as the "Black Cordillera," free from perpetual snow.

To enter the valley of Huaylas from the coast port of Casma the trail winds over this Black Cordillera, reaching at the pass an elevation of about 13,000 feet. To leave the valley, going eastwardly to the Marañon, the trail crosses the "Cordillera Blanca" at an elevation of about 15,000 feet above sea-level.

The river Santa flows down the valley, rising in Lake Conococha, and emptying into the Pacific Ocean near Chimbote. This river appears to have broken through this western Cordillera, in ages past, turning sharply from its course down the valley, to the west, and passing through a deep canyon known as the *Canyon del Pato.* The ground at this point is exceedingly broken, friable, and precipitous. Loose cliffs, thousands of feet in height, overhang the river—of gravel and conglomerate standing nearly vertical—and threatening to fall and block the entire passage.

This has, in effect, taken place at some previous time on more than one occasion. A line of railway ascends from Chimbote for a distance of about 50 miles, crossing the sandy coast-zone and entering the canyon. Part of this railway was carried away years ago, due, probably, to a catastrophe of the above nature, when the waters of the river became dammed up. I rode my mule all day long over this ruined railway at the bottom of this canyon. In places the rusty rails hung in long festoons between the old abutments of bridges, or remaining portions of embankments. Here and there vast blocks of conglomerate — hundreds of tons—had come down from above, twisting and distorting the strong steel rails, which in some cases overhung the torrent like a veritable road leading to destruction. Lower down, on emerging from this canyon, the railway is in running order, and passes through large sugar-cane plantations and *haciendas*, and over great areas of ground which are susceptible of irrigation and cultivation.

The upper part of the valley is of an entirely different

character to the canyon; the fall of the floor being slight, and the ground being much under cultivation. It is, in fact, one of the most numerously-populated parts of Peru, and contains several important towns, the centres of agricultural and mining districts.

The principal of these is Huaraz, a typical town or city of the Peruvian Sierra. It lies within a broad *Campiña*, or cultivated area, watered by the river. Its altitude above sea-level is 9,930 feet: which in Peru ensures a mild and healthy climate, although cold and rainy at certain seasons. The population of this city is about 5,000, or about 10,000 including the outlying district. Of these the greater part are the Cholos—the Quechua Indians, more or less crossed with Spanish-Peruvian blood. The upper class is formed of Peruvians of Spanish descent. The inhabitants live by agriculture, mining, and commerce with the exterior. The means of communication with the coast and the interior are by difficult pack-mule roads—mountain paths—which necessarily cross one or the other ranges of the Andes, at great altitudes.

The city is built after the usual plan. A large *plaza* is surrounded by the Cathedral on one side, municipal buildings, shops, and houses on the other. The Cathedral —a somewhat high-sounding name for the adobe structure with little pretension to architectural construction—is in rather a ruinous condition. I was informed that this unfortunate condition was due to the Bishop—who had been charged with the funds for the restoration—having spent the money in a journey of pleasure to Europe!

A large Indian population lives in the neighbourhood of these important cities—the usual Cholos of the Sierra, who are principally agriculturalists, owning and working their small *chacaras*, or farms, and living an exceedingly independent life, as elsewhere described.

On market-days, fairs, and *dias de fiesta*, or Church feast-days — which latter, it may be remarked, are numerous—the Cholos and their women crowd the place, lending, with their bright-hued *ponchos* and white felt hats, a picturesque aspect to the narrow streets and large *plaza*.

These feast-days are the veritable harvest-time of the priests, and the Cholos the real sheep of his flock, whose shearing provides him with no stinted supply of this world's goods. The "prices" or fees charged by these functionaries are rigorously exacted; no Indian can be born, baptized, married, or buried without the necessary tribute. The greatest drunkenness prevails often upon these feast-days, which are fomented, and even invented, on every conceivable occasion by the priests in order that some contribution from mass, orations, baptisms, christenings, and so forth, may accrue to them. The temples are open, and few of the Indians fail to enter and leave a contribution of some kind.

The religious processions, especially during Holy Week —the "Semana Santa"—are quite striking in interior towns such as Huaraz, and the ceremonies and performances pertaining thereto are perpetuated principally by the priests and the Indians — the better class holding aloof. Life-sized figures of *Jesu-Cristo* and the soldier-executioners, arranged as a kind of tableau upon a platform, are borne through the streets upon the shoulders of Indians, groaning and sweating beneath the load, yet full of satisfaction from the honourable and sacred task which, from their point of view, they are performing. Other incidents in the life of the Holy Family are also represented, the foremost and favourite figure being that of *Maria.* It is to be observed, in this connection, that the Indians do not reverence these figures as such, but declare that they are an actual personification or embodiment. Formerly, there was also a procession of *Señoritas*, or young ladies of the upper class; but this custom now appears to be falling into disuse.

There is undoubtedly a decline in these old religious customs in Peru, some of which savoured more of idolatry than anything else. There is some reaction taking place after centuries of priestcraft and the ignorance which it perpetuates, and which often brings into effect the opposite extreme of materialism. I was surprised to find, in such a stronghold of Roman Catholicism as Arequipa, plenti-

Religious Procession at Huaraz.

fully displayed in the windows of book-shops, numerous works of modern scientists, philosophers, freethinkers, evolutionists, materialists, etc., including those of Darwin, Spencer, Draper, Reclus, Renan, Haeckel, Schopenhauer, Kropotkin, and many others. These are all in Spanish, cheap paper-covered editions, with good type, and are issued by a publisher in Madrid. It is by no means a bad sign that these works are purchased and read. Under any circumstances it was inevitable, sooner or later.

As regards the processions, they are beginning to meet with disapproval, as before mentioned. I preserved a rather striking handbill which was on one occasion freely distributed by some protesting and justifiable reformer. It consisted of an extract—in Spanish, of course—from Jeremiah:

> "For the customs of the people are vain, for one cutteth a log out of the forest, the work of the hands of the workman with the axe. They deck it with silver and with gold; they fasten it with nails so that it move not. They were made in the likeness of a palm tree and will not speak. They must needs be borne because they cannot go. Be not afraid of them, for they cannot do evil; nor good. There is no likeness to Thee, Lord; Thou art great, and Thy name is great in might. But they are altogether brutish and foolish; the log is a doctrine of vanities; every founder is confounded by the graven image, for his molten image is falsehood, and there is no breath in them. They are vanity and a work worthy of ridicule; in the time of their visitation they shall perish. For the pastors are become brutish, and have not sought the Lord. Therefore they do not understand, and all their flock shall be scattered."

I have quoted the whole of this to show the ingenious selection which had been made from the text of the tenth chapter, in condemnation of images and priests who use

them. Any variation of a few words from the English Bible is due to my having translated literally from the Spanish, as the words seemed more pointed. It is useful to note, in this connection, what an added meaning is given to Scriptural passages by comparing them in more than one language.

A curious feature of the interior cities of Peru is the absence of vehicles. There are no roads to the outside world where such could go, and the traveller finds himself in streets where no wheels rattle over the pavements. Roads and railways are difficult of construction and maintenance in these regions. Rock excavation and terracing along steep hillsides is expensive, whilst the heavy rainfall and consequent disintegration of the slopes call for constant repair. The heavy gradients, also, necessary to overcome the summits of the ranges, renders the cost of carriage high in the existing railways. Nevertheless, if the inhabitants of these places possessed a greater spirit of enterprise they could do much toward bettering their conditions, instead of waiting for foreign capital to build railways for them. Such cities as Huaraz, Huancavelica, Huancayo, Cajamarca, Huanuco, and others, all important centres of population and produce, might at least construct carriage roads to their respective seaports. As it is, the existing mule-trails are not even kept in order, as a general rule. The city of Huancayo lies in a fertile valley, as I have described elsewhere, with numerous other towns not far away, yet no road has been made connecting them, nor any vehicular traffic established. Similar conditions exist with regard to Huaraz and the valley of Huaylas, and a fine road could be built here at small cost. In all these regions there exists cheap labour: the Cholos, at small pay, could construct these roads, and the shopkeepers and merchants of the cities should contribute towards them, if the Government grants are not sufficient. Above all —and here is the rub—the funds should be honestly administered and strictly used for this purpose.

The roads to these cities from the coast generally

LOOKING ACROSS THE VALLEY OF HUAYLAS.

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ascend the river-valleys, and wind along difficult and precipitous side-hills. During the war with Chile, and subsequent occupation of the country, the Chilian soldiers invaded all these interior cities, notwithstanding the difficulty of access thereto for men and cannons. "How is it," I have often asked the Peruvian of the interior cities, "that this was possible? There are passes in these valleys which the enemy had, perforce, to traverse, where twenty resolute men with a field-gun could almost hold an army at bay." Their reply is that the country was divided in civil war at the time, and that little resistance was, in some cases, offered to the Chilian invasion of the interior. Apathy and indifference marked the behaviour of the inhabitants; and, moreover, the Peruvian Cholo soldier is not the equal in aggressiveness or resistance of the Arucanian, which is the basis of the Chilian common soldier. Stubborn resistance was, however, in some cases offered.

The "common carrier" over the roads of the Andes is the *arriero*, or muleteer. All freighting of goods is done from the coast by means of pack-trains, and the muleteer is an important element in the economic life of the community. Dirty, picturesque, and hard-working, he is a veritable knight of the road, charging all he can from you, but generally doing all in his power to serve you, with the exception of economising time—a matter to him of little moment, and of surprise that you should be impatient. How often have I cursed his dilatoriness in getting away in the morning, and his incapacity to see that it is not the same thing to arrive to-morrow as to-day! I recollect on one occasion being obliged to waste an entire morning waiting for my *arriero* and beasts. The place where I was staying had a large blank wall, painted white, in full view of a bridge crossing the Marañon river, where a good deal of traffic generally passed; and I amused myself during the lost time in painting on this wall, in enormous black letters, the words "*Tiempo es oro*," in English meaning, "Time is money." A crowd of villagers soon collected

to enquire the signification and reason of this legend; and probably to this day the words remain there, and are studied by the wondering *arrieros* as they pass the bridge, and bringing back to the simple people of the place some recollection of the *inglés* who had sojourned among them.

It is no easy matter, at times, to pass a pack-mule train upon a mountain-path. On one side rises the rocky wall, on the other is a sheer descent, and sometimes the ancient carcasses of mules far below are seen, which have fallen over, or been crowded off the path. When you hear the tinkling of the leading animal—generally a horse—of an approaching *recua*, or mule train, you and your mule hug the wall side of the road, and let the others pass you on the outside, taking care that your outside leg is not carried away by the projecting burdens of the mules—tins of petroleum or alcohol, baulks of timber, bundles of "Manchester" goods, sacks of ore, or whatever they may be carrying. It does not soothe one's temper to be prodded in the leg with the corner of a sheet of corrugated iron, for example, or to have your saddle-bags crushed by the impact of a sack of silver ore!

However, you are generally safe enough, and watch the train pass with interest. The line straggles up the steep path; the tinkling bell of the leader gets farther and farther away; the last, the *arriero*, salutes you respectfully with "*Buenos Dias, Señor*," and spurs his emaciated steed to greater effort with his enormous spurs. His method of admonishing his lagging pack animals is curious and original. At times he addresses them in terms of endearment or persuasion, begging them as a favour not to delay, or crowd each other off the path. At others he brings forth a long string of epithets, such as it would be impossible to reproduce in these chaste chronicles. "Ah—ill-bred female mule! Ah—old horse of doubtful ancestry!" and so on, in picturesque and descriptive obloquy; and having at length exhausted his extensive vocabulary he winds up with the last and deadliest insult of all, which is contained in the single word, "Animal!"

This has been reserved till last; and if it fails to have the desired effect, there is no remedy but for him to dismount and approach the offending animal on foot, and employ other methods.

These interior cities are much isolated from each other, and from the coast. In his journeying from one to the other the traveller is ever rising and descending, crossing deep valleys and high ridges along which the trail winds interminably. "One league an hour" is his general average rate of travel, unless the ground is flat, and he is unaccompanied by the pack-mule with his baggage. What do the inhabitants of these places do to fill in their existence? it might be asked; and truly there is little to vary the monotony of time and circumstance in those communities. Moreover, they do not appear to be always sociable among each other, and the "defects of small communities" are noticeable in the coldness and jealousies which sometimes mark their intercourse. However, they pass, at least, a tranquil existence; and poverty is less acute than in European or North American cities, whilst pride and snobbishness are not as marked as, for example, in English country towns.

Hygienic conditions do not greatly trouble them. The drains are open conduits which are flushed by a constant stream of water diverted from the river which flows through the *campiña*. Heaps of garbage are deposited at the street corners at night, and I recollect, in Arequipa, that bands of huge dogs surrounded these in the dark, almost disputing passage with the lonely pedestrian returning late to his hotel. In some towns the wary traveller will keep his eye open for the possible contents of some receptacle, which might be discharged from some balcony near which he were passing! I once called down the wrath of some Peruvian friends by stating that this had occurred on several occasions. They indignantly repudiated it, saying that such a thing was impossible in a cultivated community; and it did not mend matters when I said that I had brought a good strong umbrella from London, and should put it up when I went along the

streets of that particular town again! Umbrellas, I may point out, are almost unknown in Peru.

In the *plaza* of these cities there is generally a *retreta*, or performance by the band, although this is often conspicuous by its absence. In this respect the Peruvians are much behind the Mexicans; in Mexico, every town, however small, has its regular *serenata* in the *plaza*. I recollect on a certain evening—it was my birthday—in a Peruvian town where I was staying, feeling awfully ennuied. There was no distraction of any kind; all the good people were shut up in their houses behind the customary barred windows, and for a number of days the band had failed to play, due to the lack of contributors for its support among the inhabitants of the city. Indifferent as the music of these performers was, it would have broken the deadly monotony of the evening, and an idea occurred to me. If the people of the place were too stingy or poor to have the band to-night, I would have it myself, on my own account! To think was to act. I despatched my boy to find the bandmaster, who shortly appeared. "How much will you charge," I asked him, "to play me an hour's *retreta* in the *plaza*?" "Four *soles*, Señor (about eight shillings)," he replied; and the bargain being struck, he departed to collect his musicians. Having dined, I repaired to the deserted *plaza* at the hour I had indicated, and took solitary possession in the chair which my servant had brought, and waited for the band. It came. A battered violin, a harp of huge size, and a drum, and a stirring march was whanged and thumped out upon the air. The effect was marked. Doors and lattices were hastily thrown open in the houses adjoining the *plaza*; curious persons issued forth, anxious to learn the reason of this unexpected and unannounced *retreta*; others followed, a small crowd collected, and soon pretty girls came forth to promenade, asking among themselves who was the cause of the entertainment. Afterwards, when the band made an attempt at "God save the King," they learned that it was provided

by the solitary and eccentric Britisher — the stranger within their gates; and I received various congratulations upon my birthday anniversary. A dance was got up at the house of one of the principal families, which I attended. Some of my men, having imbibed too much *chacta* in honour of the occasion, made a great disturbance in one of the *fondas*, or small houses of refreshment; struck a *gendarme*, who wished to arrest them, and caused a large crowd to collect in the street. The Sub-Prefect, who came to enquire the meaning of the disturbance, was hissed by some of the people—he was not popular—and several arrests followed. I was obliged to go and bail my servant out. So that my innocent endeavour to break the monotony of the evening had the unexpected effect of putting the whole place into an uproar.

CHAPTER X

LIFE IN THE CITIES OF THE ANDES—*Continued*

THE Peruvians are a hospitable people, as I have shown elsewhere; and the traveller, especially if his errand be a scientific one, is well received by the people of the places he passes, who do all in their power for him. At some houses where I have stayed, I have, out of politeness, been obliged to consume as many as five substantial meals in a single day, and I should hesitate to record the number of *copas*, or small glasses, of wine or spirit which are pressed upon one on such occasions. Feasts are prepared, and the principal members of the community are invited, and the traveller speedily becomes the centre of a group, who ply him with questions, insist upon drinking with him, compliment him upon his Spanish, and enlarge upon the topics of the day, and the attractions or notable points of the neighbourhood. This is sometimes trying, but there has often been to me much of novelty and pleasure in meeting these people, and in fulfilling the part of the "distinguished foreigner" to their satisfaction.

I have at times been called on to make grandiloquent speeches in return for their compliments—a difficult task for an Englishman. On a certain occasion a shooting match had been arranged between the civilians of the town and a regiment of soldiers which had been temporarily quartered there. I was requested to act as a judge or umpire—"the intachable British sense of fair play," as they kindly put it, being "absolutely necessary" for the occasion. So all the notables of the place—including myself—mounted their horses and foregathered

in the *plaza*, whence a start was made to the shooting range. The procession was headed by the Prefect; next came the Colonel of the regiment—the streets, it must be mentioned, hardly permitted riding abreast — next, myself, followed by the principal residents of the town, whilst numerous "nobodies" brought up the rear. The inhabitants lined the streets to see us pass, and enthusiastically applauded, arriving afterwards *en masse* at the range to finish up anything in the way of "free lunches" which might be forthcoming.

Well, I took up position as umpire about fifty yards to one side of the target, and it nearly cost me dear; for some wild shooting was performed by the civilian challengers, and just as a mauser ball sang by my ear and ploughed up the dust behind me, the bugle sounded the note of "cover," which I promptly took. This had been done by order of the Colonel at the firing line, as he did not wish—he afterwards informed me—to see me killed.

After the match the principal event of the day came off—the breakfast, or rather lunch. Much eloquence was displayed during the terminating champagne, and it was here that I passed the ordeal of making a speech in Spanish. Some of the speakers had dwelt on the Chilian invasion and indemnity of last century, as they often do at such gatherings, for the recollection of these matters, and the continued occupations of Tacna and Arica by the Chilians, rankles deeply in the breast of the Peruvian —their Alsace—Lorraine. One of them, the Prefect, had made some kind remarks about the pleasure they had had in seeing foreigners among them on that occasion—remarks which called for some acknowledgment. There were present a German, an Italian, and a Spaniard, all older men than myself; but as they made no show of getting up, and as glances were directed towards me, there was nothing for it but to speak, and fortunately inspiration came. With a wave of my hand I bid the band cease playing, and summoning my best Spanish, I briefly spoke of the pleasure I had experienced in being among them, and then wound up with the

following: "Gentlemen; civilians, or soldiers,—I have observed your unrest regarding your neighbour—Chile. I know something of that country, from my travels, as I also know much of your own; and I think I see, with a philosophical eye on the horizon of the future, that day approaching when Chile will ask to be admitted as a distant Province of Peru!"

The effect was tremendous. Soldiers and civilians hammered the table with bottles and glasses, and the Colonel came round and positively fell on my neck; whilst the glasses of champagne, whisky, beer, brandy, and every other alcoholic drink on the ground which were pressed upon me would speedily have rendered me *fuera de combate* had I partaken of them all. I was the hero of the moment.

Of course, by this sally, I meant nothing which could offend Chilian susceptibilities. I referred rather to geographical and commercial considerations, such as a unification of territory, or interests which surely must, at some future date, take place among nations of the South-American Continent. Also, the Peruvians are undoubtedly worthy of some sympathy in the question of Tacna and Arica; looking at it disinterestedly.

I fear that rather too many healths were drunk on this occasion. A great deal of food and drink had been brought on to the ground for the banquet, and neither were wasted, for, possibly on account of the jollity which obtained, the populace which attended thronged around the kitchen afterwards, and made a clean sweep of everything in sight. I saw an Indian woman and her baby regaling themselves with raw sausages and a bottle of champagne; whilst another Cholo improved the occasion and appeased his appetite with a tin of *pate de fois gras* and sweet French biscuits!

Whatever may be the disadvantages of living in such remote communities as these, it must be conceded that living is not dear. Ground can be obtained for a mere nominal price; building material is absurdly cheap, houses usually being constructed of adobe dug and made *in situ*,

and with roofs either flat or covered with thatch or tiles. Any foreigner with a small fixed income could live in such towns with considerable comfort—not, of course, in luxury—and enjoy distinction socially, and take prominent part in the affairs of the community. He could easily acquire servants, land, cattle, plantations and mines, create valuable properties and do much good, if he were an educated and well-disposed person. The country is stagnant for want of money to develop it, and a great deal can be obtained for a very small expenditure.

In these places anything that may offer occasion for diversion is seized upon. The people are fond of music and dancing, and *bailes* are frequent. I have often been pressed to attend these; and though I have protested that I did not care for dancing, they insisted on my going, unless I were positively able to assure them that it was "mail day," or other valid excuse. "Come, Señor," they would often say. "We have not, it is true, got the best whisky such as you Englishmen always require (*sic*), but, on the other hand, we can offer you an open heart; and plenty of *pisco* (native grape-spirit); and—there are pretty girls to fall in love with!"

Who could resist such an appeal? I go to the ball. The ladies sit on one side of the room on benches against the wall, and the men on the other, with at first a good deal of restraint. But after being warmed up by dancing and the consumption of *copitas* of *pisco*, the company becomes much more animated, and a good deal of "falling in love" takes place: bright eyes give forth expressive glances, hands are squeezed freely, and at length all adjourn to supper, after which the dancing continues until the early hours of the morning.

In Peruvian cities, generally, there are far more women than men, and the relations between the sexes are not governed with the same rigidity as in Europe—a condition which it would be impertinent for the foreigner to criticise, in view of matters of race, temperament, and general conditions. In Spanish-America generally there is a tendency in this respect to a mode of life somewhat

approaching that of Bible history. Man, in the primitive and undeveloped conditions of the interior communities, seems to be called upon by Nature not to be too artificial or rigid in his customs; and to increase and multiply is her first mandate. The atmosphere, the environment, the general conditions of life are full of difference to those of Europe or North America, and do not fail to exercise some effect, even upon the foreigner.

I have referred elsewhere to the strong influence the Church and its officials exercise in these communities: an influence sometimes for good, sometimes for evil. On one occasion I inadvertently masqueraded—of all things, as a bishop! One morning, quite early, my boy came to rouse me, saying that a lady wished to see me urgently. I arose hastily in my pyjamas, and covered myself with a long black cloak that I had, as the morning was chilly, and entered the room I reserved for visitors. An elderly lady, of one of the best families of the place, was there awaiting me in the obscurity of the early morning; and, sitting down at some distance from her, I put myself at her service.

"Señor," she began, "there has been an abduction! My daughter has been taken away in the night!"

Surprised at this remarkable beginning, I remained silent for a moment. Surely this worthy dame was not accusing me of having abducted her daughter! I searched my memory—no difficult operation—but finding no such incident recorded there, remained with a clear conscience and an undisturbed and judicial exterior.

"An abduction," I repeated, "of your daughter!"

The lady replied in the affirmative, and went on volubly to describe the details of the matter, as far as she knew them.

"I regret very much to hear of the affair," I said, as she paused. "Only tell me in what way I can be of any assistance to you, and I will do anything in my power. But I hardly know what I can do."

"Will you not use your influence to force the young man to marry her at once?" she asked.

"But I do not even know him. I fear it would be useless," I replied in surprise.

The lady had been regarding me rather closely for, a few seconds, and a light seemed to dawn upon her. "But you are the Bishop, are you not?" she asked breathlessly.

"No, Madam; I regret to say I am not a Bishop. I wish I were, in order that I might assist you," I returned gravely.

"But, at least, you are the Bishop's secretary?" she asked in agitation.

"I am sorry to say that I am not even the Bishop's secretary. I am an Engineer," I answered.

The poor lady was overcome with embarrassment at hearing this. I begged her, however, not to be troubled about it, that what she had told me should be held as confidential. It transpired that she had entered the wrong house—the Bishop lived exactly opposite me—and moreover, seeing me in a long cloak, with a shaven face, and in the gloom of the early morning she had been deceived. She departed, thanking me, and I saw her enter the dwelling opposite. The sequence of the matter I never learned, as, of course, my lips were sealed against enquiry.

The foregoing incident had, if I recollect rightly taken place near Carnival time. During the three days' play and licence, to which the whole of the population of the country gives way at this time, many interesting things occur.

Formality is much relaxed, especially between the sexes, and friends invade each other's houses armed with squirts containing scented waters; india-rubber toy balloons filled with water, known as *globos*; packets of powders: all of which they discharge over each other, amid much horse-play. They get soaked to the skin and covered with powder; especially the girls, whose hair and dress I have seen sometimes rendered a sticky mass. It is considered part of the game sometimes to place a young lady, despite her struggles, in a bath

(where baths exist) with all her clothes on, and turn on the tap! There is one favourable circumstance accruing from this temporary state of licence, which is that more marriages result—brought about, doubtless, by the stirred blood of contact in their friendly struggles. At any rate, I have been informed that the birth-rate sometimes shows an upward fluctuation at a certain period after an unusually animated Carnival time!

During these three days it is absolutely impossible to walk up the streets of a town, unless you are prepared to be wet to the skin and covered with powder. From all the overhanging balconies dozens of *globos* are discharged; even entire buckets of water and bags of flour are fired at you, as well as explosive squibs and coils of paper, and confetti. When these matters give out, less agreeable ammunition is sometimes employed.

As I generally felt little desire to take part in these boisterous affairs, I usually lay low in my habitation; but one evening — it was in Lima, the capital, although similar things happened in the interior cities — feeling very ennuied, I thought I would venture out to the post-office for my letters, hoping by taking a round-about route through side streets to escape the storm of water and powder I knew was raging in the main street. It was useless. No sooner had I sallied forth—covered with a cloak and an old hat—than a well-directed *globo* from a balcony partly soaked me. The street was lined with balconies, and every balcony had its full complement of pretty girls, all armed with ample ammunition of *globos*. It must be explained that these missals are heavy, and burst upon striking one, covering you with water, and are capable of being hurled with unerring aim.

Yells of delight arose from the balconies as I appeared. What fortunate chance had brought a nice-looking Englishman along that unfrequented street? The opportunity could not be lost. A veritable hail of *globos* whizzed around me; but I seemed to bear a charmed life, and they only burst upon the pavement at my feet. Seeing that I was in for it, I pulled my collar

up and hat-brim down, and walked calmly along the middle of the street. Dozens of *globos* and bags of flour saluted me from every point of vantage, but these I did not much mind, as they generally fell short; and the buckets of water could only be emptied upon any one forgetful enough to pass directly beneath a balcony: which I avoided. Towards the end of the street the fire slackened somewhat, as the houses were without balconies, and here I breathed a moment, deciding as to what course I could most safely pursue to gain the post-office, as I did not want to be soaked. The gauntlet I had run had been severe, but was not, I knew, of the worst.

Looking up I beheld two isolated balconies opposite each other, and the occupants—some ladies whom I knew—were making signs to me to approach. I did so, little suspecting treachery, for as one of them laughingly engaged me in conversation, the others, without warning, shot out a bucket full of water, which, had it struck me fairly, would have drenched me from head to foot. This was too much. Even the *sangre fria* of an Englishman was aroused, and I decided on vengeance. Calling some of the boys, who are always about on these occasions with cloths full of *globos* for sale, I purchased a large heap of ammunition, and proceeded to wage a fearful war upon the balconies at both sides of me, my volleys being hotly replied to by the ladies. Taking careful aim, I succeeded in scarcely losing a shot, and had the satisfaction of seeing the *globos* burst on my fair antagonists' heads or limbs, soaking them to the skin. The street was narrow, and buckets of water, *globos*, and bags of flours, from both sides, freely reached me, with the effect that may be imagined; but I waged the single-handed war, until a large crowd collected in my aid. This, however, seemed ungallant, and I retired, when the ladies closed the shutters of the balcony windows. I did not mind the wetting. I was charitable enough to know that I had at least afforded them some sport, for it was an unfrequented spot, and, indeed, they afterwards informed me that they

had only had the opportunity before my arrival of soaking a few wretched Indians and a postman, and that when they saw me they were about to send out their servant to implore me to come and play.

But the evening's adventures were not yet at an end. Having obtained my letters, I put them for security against wetting in an inner pocket, and prepared for the return journey — useless to look for a vehicle, for all were occupied. A favourite dodge of people in the balconies is to tie a bag of flour to a stout cord, and when any one passes below to let it swiftly down, striking them on the hat, and then to haul it rapidly up again. This appears to afford them keen delight, and many are the unwary foot-passengers who are caught in this way. So it befell me. I felt a stunning bang on the head, but instantly realising what it was, I reached quickly upwards with my stick and successfully hooked the bag. In vain they pulled from above, and in vain they poured down torrents of water, for the floor of the balcony, under which I stood, acted as a shelter, and I retained my hold. At last I heard appealing voices, and peering upward I saw three faces bending over—young ladies again—for women are, I think, the principal perpetrators of these affairs—whom I knew. They begged me to let go, as they did not want to lose their weapon. I promised on condition that no water should be thrown as I emerged, to which they assented gleefully. But I ought to have been prepared for this new proof of female perfidy, for scarcely had I let go, still looking up at the pretty flushed faces above me, when down came a great bucket of water, absolutely deluging me from head to foot, whilst roars and shrieks of delight accompanied this treacherous act!

This was too much, really. Hastily filling my pockets and hands with *globos*, squirts, and powders, from a boy who stood by, I rushed up the staircase, and without ceremony penetrated into the room above. Here an indescribable *mêlée* ensued, in which all became soaked, torn, and covered with white, to say nothing of the

furniture. "Stupid!" they said, when I reproached them. "If you had been a Peruvian instead of an Englishman you would have known better than to believe a woman's promise at Carnival time!" Hot punch was brought in as a preventive against taking cold; and the ladies kindly insisting on having my clothes dried and brushed, I changed them, being obliged, on account of there not being any gentleman's garments available, to dress myself in one of their frocks, in which guise I had, perforce, to pass the rest of the evening in their company. I do not know why I record these foolish matters, except to show how the most serious-minded and circumspect among us may at times be drawn into frivolities by no fault of their own.

A quaint and pleasing feature of travel in the interior regions of Peru is the *despedida*, or farewell to any well-known visitor or resident who is leaving. His friends foregather, mounted on horseback, and accompany him some distance out of the town, generally as far as the nearest dividing ridge of the mountains. Here all halt, and the departing guest produces from his own or his servant's saddle-bag the liquid refreshment with which he has provided himself for the occasion: beer, whisky, or champagne, according to the occasion. The bottles are opened, and healths are drunk all round, and often verses are improvised about the city which lies below, or about the visitor, or any other conceivable subject. The empty bottles are then placed on the rocks, and all take a hand at breaking them with rifle or revolver shots, from the various weapons which each may carry. The echoes die away; a last health is drunk, and all mount their horses, waving a last salute, when hosts and guest take their separate ways; the former returning to their habitations, and the latter descending the valley road which leads him away to other scenes, carrying with him kind recollections of their hospitality.

CHAPTER XI

THE REGIONS OF SANDIA AND CARABAYA, AND LAKE TITICACA[1]

EARLY in August, 1904, I left Lima with the object of examining some ancient gold mines in the interior of Peru, beyond the Andes, upon the head-waters of the river Inambari. This river is an affluent of the great Madre de Dios river, which forms part of the fluvial system draining the western portion of the watershed of the Amazonian basin, and which, rising in the Andes near the boundary of Peru with Bolivia, unites with the river Beni, and under the name of the river Madera falls into the Amazon.

Three days' steaming from Callao brought me to the port of Mollendo, previously described, whence the Southern Railway of Peru, *via* Arequipa, took me to the station of Tirapata, a distance of 337 miles by train. The railway crosses the Andes at a height above sea-level of 14,666 feet at "Crucero Alto," and descends thence into the basin of Lake Titicaca. It then runs north-westerly to the station Sicuani, from which point construction work is now being carried out, in order to complete the connection to the old Inca capital of Cuzco. Looking westward from the railway near the summit—Crucero Alto—a glimpse is obtained of the peak of Coropuna, of unknown height,[2] but which, judging by its considerable ice-cap, must be of great elevation. The accompanying view is not taken from this point, however, but from much nearer the peak, on a subsequent journey.

The elevation of Tirapata, where I exchanged the train for the saddle, is 12,731 feet. It is surrounded by the

[1] Published in the *Royal Geographical Journal*.

[2] Given in Peruvian Geographies as 22,900 feet.

PEAK OF COROPUNA.
From a sketch made on the spot by the Author.

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vast stretches of dreary, flat land, or *pampa*, which extend north-westerly from the shore of Lake Titicaca along the Pucara and Azangaro rivers. Save at midday, when the sun shines strongly, the region is cold and bleak, and the air rarefied, due to the altitude. From the same cause cereals and alfalfa do not flourish, and the chief product is that of potatoes, and the principal industry among the Quechua Indian inhabitants that of breeding alpacas and sheep for their wool, and llamas as beasts of burden.

The first three days of my journey were performed over a new road, which had been constructed by an American mining company, and on the third night I arrived at the town of Crucero, 13,800 feet. From this point the road becomes very rough and broken, due to the steep ascent to the main summit of the Andes, known at that part of its course as the Cordillera of Azangaro. The name "Azangaro," I may mention in passing, is that of a town on the river of the same name, and is stated to be a corruption of a Quechua word, meaning "the farthest away," as it is supposed to be the furthest easterly point—the Cordillera—dominated by the Inca *régime.*

The trail crossing the summit, skirts the shore of a large lake—Lake Aricoma—whose green and blue profundity reflected the peaks, covered with perpetual snow, which arise immediately upon its eastern verge, and whose glaciers give birth to the constant streams which feed it. The altitude of this beautiful lake is about 15,000 feet above sea-level, and the road ascends to about 16,500 feet shortly beyond, crossing a portion of the ice-cap. I again passed this point upon my return journey, and shall further speak of it. To the north-west are seen some of the snow-clad peaks of the Nevado de Vilcanota: a colossal range.

This summit of Aricoma marks the water-parting of the continent, the southern side forming that of the watershed of Titicaca, whilst the northern is that of the Amazonian basin. The usual Andean storm came

on as I descended; and, pelted, battered, and soaked with rain and snow, I arrived at nightfall at the village of Limbani — 11,700 feet altitude — and lodged at the house of the gobernador. Here I met a Peruvian engineer, bound for the same place as myself, and we decided to make the journey in company, to my objective point, known as *Aporoma*, where the gold mines are found. Near Limbani are grottoes containing mummies, which I regret I had not time to examine. I was informed that the mummies exist in a sitting posture.

Having overcome the difficulties and delays which are the invariable accompaniment of the organising of an expedition in Peru, we set out in the early morning on the last day of August. The expedition included ten Indians, armed with machetes, etc., and carrying heavy packs consisting of our bedding, implements, and food for three weeks' journey; for the route lay through an uninhabited region where no supplies could be obtained. Nine of these Indians were the usual Cholos of the Sierra, whilst the tenth was a *Chuncho*, of the—reputedly —cannibal tribe of that name, inhabiting the far interior of the Montaña. Nevertheless, the Chuncho, having come to the Sierra when comparatively young, had become somewhat civilised, and was, moreover, almost the only one among them who could speak or understand a little Spanish.

I had taken a consensus of opinion as to the route it would be necessary to traverse, and as a result decided to go on foot—a proceeding which I found to have been wise, as the trails were impossible in places for horses or mules. Our way lay at first along the river Limbani, and leaving this the trail wound up a long, steep ridge to a height of 13,500 feet. The granite formation at Limbani had now changed to a slate, and gold-bearing quartz lodes are encountered in the region. Having crossed the high ridge, slowly and with frequent halts, for the rarefied air of that altitude renders walking fatiguing and the work upon the lungs severe, we descended the difficult zigzag and scarcely visible trail

to a grass-covered valley below, and slept in a *tambo*, upon the banks of a stream near a small Indian village known as Cutani. A *tambo* is a building which serves for the common accommodation of travellers, and a few of these huts—for they are nothing more—are maintained in one or two places in Peru by local authorities for that purpose, although, unfortunately, they are very scarce, notwithstanding that routes of travel often pass through uninhabited regions.

Poor as was this *tambo*, its roof was water-proof, and there was some dry firewood inside, which ensured supper and a dry bed. For many subsequent nights these desirable adjuncts were only obtained with considerable difficulty, as, in order to sleep within a hut of any description, this had first to be constructed.

The progress of the party was, as regards actual leagues covered, relatively slow, for the Indian carriers were rather heavily laden, and my companion, moreover, was not a rapid pedestrian. I frequently found myself far in advance of the rest of the party, alone in those strange and untravelled solitudes of the Andes, upon the border of the mysterious Montaña.

The descent of the eastern slope of the Andes is rapid, and the change of temperature as the traveller approaches the region of the forests very noticeable. At the end of the second day I found myself alone, following the trail along what appeared to be the back of a high, sharp ridge; for the heavens were entirely obscured in a thick, warm mist, and the landscape entirely shut out from view. Looking through the bushes on either hand, it was apparent that the ground descended precipitously on both sides, and, indeed, on the right hand I could hear, as if far below, the murmur of running water. This I knew to be the river Pacchani, which rises in the Cordillera and empties into the Huari-huari, and so into the Inambari river, before mentioned.

The mist panoramas in these regions are remarkable at certain seasons, and the rains are heavy and continuous

after midday. I sat down and waited for the rest of the party, and as soon as the Indians approached set them to work in cutting boughs and building a shelter for the night on the only spot available—a small ledge of rock about 6 feet wide, with an abrupt precipice of some thousands of feet of sheer descent into the river below, and over which our feet almost hung as we lay down to sleep upon our blankets.

For two days more we pursued our journey, the rain pouring down upon us incessantly. The "trail"—if by courtesy I may term it such—passed at times through a series of rock-basins worn in the slate, and progress was made through them as through a succession of "baths," for they were full of water from the rain. I made no pretence of keeping dry; it was impossible during the march, for, apart from the "baths" underfoot, the vegetation met overhead, and being loaded with water sent down its showers at every step. Impatient of the wearied Indian bearers, I carried a machete in my hand, and often was obliged to carve a way through the thick growth of the brushwood which covered the old trail, for we had now left the open slopes of the Cordillera, and entered upon the upper edge of the Moñtana, or region of forests.

The altitude at which this vegetation begins is from 10,000 to 11,000 feet above sea-level, and the line of demarcation is strongly noticeable. Above are the slopes and valleys of the *pajonales*, or grass-covered areas, free of trees of any description; whilst below the traveller enters among thickets of tangled brushwood of all kinds, and in places of beautiful flowering shrubs. As he pursues his journey onward and downward palms and tree-ferns appear, the atmosphere becomes warmer, the mists lie heavier, and the silence is broken only by the patter and fall of the heavy water-drops from the boughs above. Scarcely a living thing appears to inhabit this upper fringe of the tropical Moñtana. There are no monkeys, no snakes, no birds, and very few insects. An occasional puma is heard, and at times the swish of

Old Gold Mines of Aporoma.

condorian wings in the ambient above; but Nature here is in a changing phase, and her profusion of animal life seems to be reserved for the more tropical interior, still many leagues away towards the sunrise.

At times the mists lifted for brief moments, and gave me glimpses of far-reaching tree-clad slopes divided by profound valleys, stretching away into the vast Amazonian basin. At a turn of the trail, which brought me out upon the brow of a hill, I beheld a cascade on the opposing slope of a valley—a high, white, lace-like fall among the green background of the branches; and I hailed it with satisfaction, for, from descriptions of the place, I knew it to be not far from the point of my destination. It forms the source of a small river, the Puli-puli, which runs close to the mines of Aporoma.

Difficult as the trail had been, it nevertheless bore witness to the considerable work which had at one time been carried on at these mines, for long portions of it were constructed of slabs of stone placed in the form of steps, and must have been made at considerable expense in the past centuries when the mines were worked, first by the Incas, and later by the Spaniards, for these latter did but work on a larger scale, in many cases, what the former had previously discovered and used, as elsewhere described.

At length, after more than four days on foot from Limbani, and sleeping and eating under difficulties, we arrived at Aporoma. It was already evening; the rain was falling heavily, as usual, and there was no habitation or living being in the vicinity, notwithstanding that in bygone ages it had been the scene of the activity of thousands of workers, and that a village had existed there. But after diligent search among the vegetation, in a spot which the Indian guide — with that strongly-developed faculty for locality which his kind possesses— had stated as being the site of the former house near which he had worked when a boy, the walls of a habitation were discovered. Animating all hands, I directed the clearing away of the heavy growth of

vegetation which cumbered them, and within a couple of hours the interior was free; a durable roof, composed of strong branches covered deep with leaves and grass was constructed upon the walls; our beds were arranged upon a floor-covering of aromatic boughs, and a fire was kindled in one corner; so that we were able to contemplate the coming night with something of equanimity. The altitude at this point was about 7,200 feet; the temperature at 8 P.M., 46° Fahr., and at 3 P.M., in the afternoon, 60° Fahr.

The mines are worthy of description. They consist of a large area between the rivers Huayna, or Puli-puli, and Pacchani, of Tertiary gravel: the bed of an ancient river, upheaved by some eruptive action, probably, and resting upon a bed-rock of clay-slate. As previously stated, they were worked many years ago as open placer mines. Conduits and sluices were constructed of stone, and tunnels through the gravel banks, and various other works, which in some ancient records are stated to have cost a sum equal to more than half a million pounds. Vast quantities of gold were extracted, and the old workings—very extensive—attest the activity which was displayed. A "grant" of six thousand Indians was "spent," it is stated, upon this work, by a Spanish viceroy, and much of the gold extracted went to Spain. The "grant" of Indians principally left its bones in the vicinity of its toil; decimation of the population came about by rebellion, greed, and avarice; abandonment followed; and Nature presently covered up the scarred evidences of man's transitory handiwork with her generous robes of flower and foliage.

I penetrated some leagues further into the Montaña, following the course of the river, and descended to an elevation of 5,000 feet. The temperature here was much higher, due to the descent, and registered in the evening 69° Fahr. The hill-slopes and valleys are thickly covered with trees of comparatively small girth and height, and the existence of a few cedars marked the beginning of the region where these flourish. The country is exceedingly

broken and difficult of access here, and the rivers are torrential and rapid. The geological formation is a slate, heavily charged with iron pyrites, and containing quartz veins, gold-bearing.

Returning to Aporoma to finish my study of the mines, I was confronted with a strike of the Indians. The cause of this was the lack of provisions, which had given out. To gain a couple of days, we despatched home those among them who were not absolutely necessary, and supplied the remainder with food from our own slim remaining stores. But at length I had to give the order to depart, for there remained nothing but rice and tea; and on this we were obliged to subsist for five days, under forced marches, in order to get out of the Montaña and return to Limbani.

The traveller has continually to observe the truth that misfortunes never come singly; and on the second day one of the Indian bearers—the Chuncho—disappeared, and left his baggage in the trail. As the other bearers were already over-loaded, it was impossible to distribute his bundle among them, and, ordering a halt, I was obliged to have a selection made of articles which could be dispensed with most easily. I abandoned my travelling-cot and various articles of clothing, and my companion some of his instruments, whilst we reduced the number of our cooking utensils to the lowest possible limit. The Chuncho we never saw again, and the Indians considered that he had gone to rejoin his tribe. As a tribute to aboriginal honesty, I may state that he took nothing away but his own things, notwithstanding that among the articles he carried were my saddle-bags, containing a sack of Peruvian and Bolivian silver dollars.

At the end of the third day our meagre rations of rice and tea were concluded, and we formed camp early, with the intention of making a long march on the morrow to the town of Phara, which was rather nearer than Limbani. A rude roof of branches was constructed, but, fortunately, the rain had held off during the return journey. The sky had been clear, but as evening fell the mists arose

and formed one of those curious and weird transformation scenes such as the traveller in the Andes may witness. Some descriptions of these I have in my notebook, written on the spot, and they are reproduced in the chapter descriptive of the Andes.

We duly arrived at Phara, and breakfasted at the home of the *cura*, and in return for his hospitality photographed the ancient church there. Within this building is an enormous altar composed of mirrors and brass-work, which latter was at one time covered with gold and silver. The point of interest about this altar was that it had originally belonged to the church at Aporoma, I was informed, which had stood in the village there—the vestiges of which, as I have described, are now buried under the dense vegetation—the growth of generations. Gold is found even at Phara. The *cura*, during our conversation on the matter, said to me: "Oh, I have got plenty of gold in my garden!" And, taking a *porongo*, or pan, we went outside, where from among the potatoes an Indian servant took some shovelfuls of black soil. This the *cura* skilfully washed out, and then handed me the pan, in the bottom of which were several flakes of alluvial gold.

At Limbani I paid off the Indians, and, having with great difficulty secured mules, we again ascended the steep eastern slope of the Cordillera, and arrived at Aricoma, before described. The Indians gave themselves over to a carousal at Limbani, and I may here again mention the evil effects which are being produced in the regions of the Cordillera by the abuse of alcohol among the indigenes. I have on some occasions had to waste several days in attempts to secure beasts and a guide in these interior towns; but, nevertheless, have met cavalcades of twenty or thirty mules or horses entering or leaving the place, and loaded with — what?—square tins of alcohol! This terrible stuff is alcohol of 40 degrees, made from sugar-cane, and enormous quantities are consumed by the Indians, who will go to any lengths to obtain it. At times it is impossible to purchase a piece

of bread in the native shops, or anything in the way of provisions; but, nevertheless, they are all replete with bottles of this *aguardiente*, or rum. I have seen huts covered with the sides of the empty tins, and in one place the church is actually roofed with these tins! It is a lamentable state of affairs, and must lead to the diminution of the working population, but its remedy seems to lie only in the hands of the wealthy sugar-growers, who make the rum, and who are sometimes the legislators of the country.

The lake of Aricoma runs north and south, about 2 leagues in length. Its depth seems to be very considerable, as I have observed in many other similar lakes which are so remarkable a feature of the Cordillera of the Andes throughout its length. The existence of these numerous bodies of water, actually astride the summit of the mountain range, is a matter which arrests the attention of the engineer, and probably some day they will form a valuable source of hydraulic power.

Our journey was slow, for my companion was not a good horseman, and a heavy snowstorm overtook us upon the edge of the lake. Night was approaching, and the group of Indian huts we had expected to reach was still many miles distant. It was useless to proceed, and I called a halt. The only shelter was that afforded by the remaining walls of an ancient Inca ruin, and I formed a sort of tent by securing the corners of the sheets of my bedding into the interstices of the stone-work with stones rammed in. Under this we arranged our couches, and made coffee over our spirit-lamp, afterwards obtaining a few hours' sleep, whilst the snow steadily piled up on our fragile roof, which, later, fell down upon us! Notwithstanding the altitude—15,000 feet at this place—it was not very cold, the thermometer scarcely going down to freezing point, which was fortunate.

Instead of returning over my original route, I had decided to extend my journey to include others of the auriferous regions of the provinces of Sandia. We, therefore, followed a south-easterly course along the tableland

which forms a plateau below the snow-capped peaks, at an altitude more or less equal to that already recorded, with the town and mines of Poto at our objective point.

The topographical and geological formation over this distance is remarkable. Our way lay principally along the bank of the Poto river, which runs through extensive *pampas* or plateaux, as above stated, of auriferous glacial or alluvial drift. In many places the Indians work on the banks of the streams by the method known to them as *acochar*, which consists in damming the water up in a small reservoir, and then allowing it suddenly to flow out and impinge against a bank or area of auriferous material, washing it down into a rude stone-paved sluice. where the gold is recovered. These auriferous *pampas* and banks, which cover distances of many leagues, are probably deposits formed by glacial action upon the gold-bearing slates and quartz of which the Cordillera is composed. The stones and material are not water-worn, as in alluvial gravel elsewhere, but are angular, and contained in an ashen-hued soil, carrying the gold. The *pampas* are strewn with boulders of white quartz for many leagues, which catch the rays of the sun. The more broken portions of the plateau and the lateral valleys are covered with pasture, and hundreds of thousands of head of sheep, llamas, and alpacas abound, belonging to the Indians of the region. I encountered large herds of vicuña, and quantities of geese, ducks, etc., upon the numerous small lakes. Some of these plateaux have probably been at a former epoch lake-bottoms; and, indeed, I passed through remarkable formations, consisting of long "shores" of conglomerate, or indurated gravel which stood up in vast cliffs underlaid by caves, and which latter were the home of thousands of *vizcachas*, or native squirrels.

The town and mines of Poto are at an altitude above sea-level of nearly 16,000 feet. Very extensive mining has been carried out here by the Indians before and during the Spanish *régime*, by the method previously described of *acochar*. There is, at present, a modern plant working by

the "hydraulic" method with water in "monitors" under pressure, upon an enormous moraine of gold-bearing detritus. The huge bank descends from the Cordillera of Ananea, above the line of perpetual snow a few miles distant. There are also mines at Ananea, more than 17,000 feet elevation, and these workings are certainly among the highest on the globe. During my stay at Poto (in September) the thermometer registered generally 104° Fahr. at midday, in the sun, and 37°·4 Fahr. in the shade, by which it will be seen how considerable is the range of temperature due to heat of the sun and the rarefaction of the air. Nevertheless the cold is not excessively intense even at the coldest season, although snow and rain-storms are frequent and severe. Terrible thunderstorms occur, and the lightning continually strikes exposed points. I may here mention that the presence of electricity in the atmosphere, even at normal times, is very noticeable. The boas, made of vicuña fur, which one wears as protection against the wind, and one's clothing "crackle" in a remarkable manner when the least friction is applied. The same effect is strongly produced in combing one's hair; and if it be done in the dark, sparks are observed to be produced by the friction of the comb. At Poto a curious scene is observed—the half of a church tower protruding from a stony plain. Seven years ago a lake or reservoir burst, somewhat higher up in the hills, and brought down vast masses of gravel and *débris*, which buried the village entirely, leaving only the church tower.

Leaving Poto, I continued my journey alone, except for my Indian guide, still in a south-easterly direction, with the intention of skirting the northern end of Lake Titicaca, and arriving at the station of Juliaca, on the southern railway of Peru.

The country was entirely covered with freshly-fallen snow. The temperature was like that of the breaking up of an English winter and the coming of spring, for the air was soft and mild in the early morning. Beautiful white cumulous cloud-masses against a glorious blue sky, with a bright sun, were reflected in the mirror-surfaces of the

numerous small lakes I passed. Magnificent water-fowl swam upon these lakes, and I obtained one of them with a shot from my long-barrelled Colt's revolver—this not as a wanton taking of life, but that the bird would supply the scarcity of provisions I knew I should encounter on the morrow.

Bands of *vicuña* stared wonderingly as I passed, and one splendid fellow—a sentinel upon a knoll—is almost within reach of the revolver's range, so near that I am tempted to try a shot. But I might have saved my cartridge, for he and his ten companions are away like the wind, only to stop and utter their curious and plaintive, protesting or warning cry 300 yards away, where they stand gracefully and gaze at me. Both the *vicuña* and the *huanaco*, or *guanaco*, are found at these elevations, the latter being less plentiful.

Ever these glorious white, cloud-massed, cumulus columns, upward flung into the blue empyrean; ever these silent and virgin everlasting peaks of eternal snow, which I am paralleling, upon the Bolivian border, and whose mysterious cañons and violet snow-cornices blend from time to time with the fleecy mist-matter above them; ever this unbroken solitude, and the feeling of being upon the top of matter; and ever this extensive silence, undisturbed save by the cry of the *alcamarini*[1] or the vicuña. Strange and beautiful region, working out some function of the world's changes in the plan of Nature's endless operations!

But the late afternoon advances, and a bitter wind arises from the snow-clad Cordillera and changes the aspect of all, and the sun has long since set, when, cold, hungry, and weary, I arrive at the town of Cojata. The industry of the people here is that of the breeding of alpacas and llamas, and the buying and selling of wool. Gold mining is also carried on, and a considerable trade done with Bolivia in the *aguardiente*, or rum, before spoken of. Cojata is very near the frontier line of that country, which there consists of a small stream intersecting the

[1] A white, gull-like bird.

Indian Junks on Lake Titicaca.

A Street in Arequipa.
(See p. 97).

pampa (part of the river Suchis). The vast glacial moraines of gold-bearing detritus are a feature of the region, as are also the *pampas* of similar material; and there is no doubt that these provinces of Sandia and Carabaya form one of the most important auriferous regions in the world. The Bolivian and Peruvian Indians here speak nothing but their language of Aymará. They —men as well as women—wear their hair in long *trensas*, or queues, like Chinamen; and they often have a distinctive dress and headgear highly ornate. Their principal diversion appears to be the consumption of *aguardiente*, accompanied or followed by a *jarania*, or *fandango*. Physically, they are by no means an inferior race; and the women are often of fair height, robust, and not unattractive in appearance, save that they are unwashed. The altitude of Cojata is about 14,800 feet.

Leaving this point, the trail ascended an eminence, from which I got a faint and momentary view, far to the south, of the famous peak of Sorata, or Llampo, (23,600 feet altitude), in Bolivia. Passing, now, downwards, and through areas of a remarkable rock-formation of hard white sandstone, lying in horizontal strata, the trail descends rapidly towards Lake Titicaca; and at every turn of the road I strained my eyes in search of its blue surface—my first approach thereto. At length I beheld it, still far off, and between the barren and rocky hills which I had to pass before reaching my halting-place — the town of Huancané. The first view of Titicaca was very beautiful.

From Huancané to Juliaca is a long day's ride, and, having secured a guide, I left before sunrise. The road lay, at first, through the lands cultivated by the Indians, between Lakes Arapa and Titicaca, and the swamps and marshes bordering thereon. These latter places are dangerous, and it was necessary to wade through a sheet of water, with my horse submerged to the saddle-bags. One may, also, cross by means of the curious *balsas*, or rafts, which the Indians use for navigation, and which are constructed of masses of woven grass or rushes, with

sails of the same material.[1] They are well shown in the accompanying view. At one portion of the route the scenery is exceedingly picturesque. There are areas of yellow water-weed, from which numerous scarlet-feathered herons arise as the traveller passes. The tips of the white Cordillera are reflected in the blue surface of the lakes, and the remarkable conical-shaped houses of the Indians give a character to the scene not found elsewhere in Peru. I examined some of these houses; they are square at the base, built in regular courses of adobe bricks. Each course is set in from the lower one, and thus the structure becomes a cone, curved in profile, and circular on plan in the upper portion. How did the Indians learn to build these curious dwellings? I have spoken elsewhere of these houses.

After sundown the cold became intense, due to the bitter blast which swept across the plateau from the lake. The altitude of Titicaca is 12,570 feet above sea-level. My guide had brought me by a longer route than was necessary, and it was not until 9 P.M. that I drew rein upon my wearied horse before the station hotel at Juliaca, where I again enjoyed the luxuries of a good dinner and comfortable bed, after nearly two months' journeying in those interesting but inhospitable regions—inhospitable not so much as regards man, but nature.

As will have been seen, some of the portions of the country I traversed are very little known, and upon the verge of the Montaña, uninhabited. The most easterly point at which I arrived, near the junction of the streams before mentioned with the Huari-huari, or Inambari river, is south-west of and only about 25 or 30 miles from the port Markham, on the navigable river Tambopata, a port named after the late President of the Royal Geographical Society, whose work and interest in the country are always gratefully remembered by Peruvians. I had desired to extend my journey to this river, but the circumstances already described rendered it impossible.

[1] These rafts form a link with an assumed Egyptian origin.

INDIAN HOUSES NEAR LAKE TITICACA.
Sketched on the spot by the Author.

The region is one of vast possibilities, both as regards the auriferous plateaux and the zone of the Montaña, which is healthy, and capable of producing crops of any kind after clearing and cultivation shall have taken place. Roads, however, or branch railways must be built before much colonisation can be brought about, and some advance is already being made in this respect. When the project of uniting the railway system of the Pacific with the navigable head-waters of the Amazonian fluvial ways is carried out, a beginning will have been made in the opening up of one of the most valuable portions of the earth's surface. I have enlarged upon this theme in a subsequent chapter.

CHAPTER XII

HUANCAVELICA AND ADJOINING DEPARTMENTS[1]

To reach the interior of Peru, and the rich mineral-bearing zone upon the eastern slope of the Andes, the traveller must, from the Pacific littoral, invariably cross the summit of the Cordillera, for this vast natural barrier parallels the coast, and leaves no pass, speaking generally, at less altitude than 14,000 or 15,000 feet above sea-level.

The Department, or state of Huancavelica, which I visited in November, 1904, is one of the richest of the mineral-bearing regions of Peru ; but it is difficult of access, due to its mountainous nature and to the fact that no roads, worthy of the name, have yet been constructed to give outlet to its products, or communication with the coast.

My way lay by the port of Pisco, about one day's steamer journey south of Callao, and past the town of Ica, a few miles from the port, and connected by a railway thereto. Ica is the centre of a fruitful agricultural district, where cotton, sugar-cane, wine, brandy, etc., are produced. The crops here, like all those of the agricultural regions upon the coast-zone, are grown under irrigation, for, as has been described, the whole of this vast stretch of continent, from Ecuador to Chile, is a rainless region. Vegetation exists by virtue of the streams of water descending the western slope of the Cordillera—streams which have their origin in the ceaseless thawing of the ice-cap, and the heavy rains of that lofty region. For the Andes, having deprived the western zone of its rainfall

[1] From the *Royal Geographical Journal.*

INCA RUINS NEAR PISCO.

Sketched on the spot by the Author.

P. 127.

by reason of the climatic conditions brought about through its agency, has, in part, remedied the defect by giving origin to these torrential streams.

My first day's journey lay across the usual sterile desert zone between the coast and the foothills of the Cordillera —deserts over which the ennuied horseman toils from sunrise to sunset. There is a group of extensive Inca ruins upon the desert, which I examined in passing. The principal feature is a large courtyard some hundreds of feet in length and width, with a series of doorways opening therefrom. Between these doorways, which are symmetrically spaced, are niches, and both are of the tapering form so often seen in Incaican architecture. A portion of one wall is shown in the accompanying sketch; the walls are of adobe and rough pieces of stone, the whole being rendered to a smooth surface with plaster formed of mud or clay. The general face of the walls has been coloured with red paints, and the niches with yellow paint or pigment. Parts of this colouring still remain, notwithstanding the centuries that have passed over it. The pigment may have been formed of iron oxides, or possibly vermilion from the cinnabar mines of the interior, at Huancavelica.

Regarding these ruins upon the coast-zone, it has been a matter for observation that they are not built like those of the interior—of cut stone—and they still exist, only by reason of the rainless climate and the climatic conditions generally, which tend towards exceedingly slow disintegration.

Whilst speaking of this immediate region, I may mention the ruins of *Incahuassi* (house of the Inca), which are found some 50 miles to the north-west of this point, near the coast also. They are chiefly interesting as showing the use of columns in Incaican architecture, various writers upon Peru having asserted that columns were unknown to those builders. The columns are shown in the accompanying sketch; they are 65 to 85 centimetres in diameter, and the ruins are stated by Señor Larrabure (an archæologist and late minister of

foreign affairs in Peru), who visited them, to belong to the fifteenth century.

At nightfall I arrived at Humay, a *hacienda* upon the Pisco river, and whose extensive vineyards are irrigated therefrom. This place, although peaceful and picturesque, has not left a pleasant impression upon me, for during the night my room was invaded by swarms of mosquitoes, whose stinging was the cause, undoubtedly, of the *tercianas*, or intermittent fever, from which I suffered afterwards.

Upon leaving this point I knew little of the hardships I should be obliged to endure for the remaining four days of my journey to my destination. The road by which I had been directed passed through a portion of the country, void of towns or villages, and, consequently, of food of any nature, notwithstanding that I had been informed that such was available. The *arriero* who conducted my pack-mule and served as guide was almost constantly drunk with *aguardiente*, and, as far as I could observe, took no other nourishment (!) during the last three days' travels. On two occasions I searched his saddle-bags and confiscated and destroyed the bottle of alcohol he carried, but he again obtained supplies of this from acquaintances among the Indian shepherds *en route*. These people were also drunk, even early in the morning; and there is no doubt that the effects of alcohol is beginning to ruin the inhabitants of these regions, as I have elsewhere observed. Due to the effects of the fever, I could not touch the coarse and scanty food of these shepherds' huts. At night the cold was intense, for we were now at a considerable altitude, and I had foolishly neglected to bring my cot or a mattress, desiring to travel rapidly without impedimenta.

There was nothing for it but to get out of the situation, and although I could scarcely mount my mule I was obliged to keep on, driving in front of me the drunken *arriero* and the pack-mule. Towards the close of the day a violent attack of vomiting came on, and I fell rather than got down from the saddle, and lay upon

RUINS OF INCAHUASI: INTERIOR COLUMNS.
Sketched from a Photo.

the plain utterly exhausted. The altitude was 16,000 feet above sea-level, the air exceedingly rarefied, and a bitter blast swept across the plateau. I thought for some time that I should never rise again from the spot, and it was only by an effort of will that I did so. But I managed to swallow two or three spoonfuls of condensed milk, and, mounting with the aid of the *arriero*, who was now sober and penitent, I continued onward, and near midnight arrived at my objective point—Santa Inéz.

Situated here are the silver mines of Quespisisa, which have produced great quantities of that metal in the past, and which still contain extensive ore-bodies. Hydrographically, the region is interesting also, for there are two large lakes of true Andean character here. The higher, known as Lake Orcococha, is 16,000 feet, and the lower, Lake Choclococha, 15,000 feet above sea-level. They are separated only by a distance of a few thousand yards, the upper being dammed up with a natural dam, formed by a moraine of soil and gravel. A noteworthy feature of this lake-basin is that, although it is upon the western or Pacific side of the summits of the Andes, it nevertheless is drained into the eastern or Amazonian watershed, by means of the river Pampas, which breaks through the Cordillera, and so into the Apurimac river and head-waters of the Ucayali and Amazon. Close at hand to the west, and at slight difference of elevation, are other smaller lakes, which give rise to the Pisco river flowing to the Pacific. Here, then, is another of those numerous instances which are met with in the Andes, where the water-parting of the continent is defined by a lake, a part of whose waters, in times of abnormal flow, may positively belong to the one, or to the other, of its adjoining watersheds. There is no fish life within their waters—a common characteristic in the lakes in these high regions. Each is 5 or 6 miles in length, and about 1½ in breadth; whilst at a depth of 250 feet, I was informed, the bottom was not reached in the middle. Their blue surfaces reflect the snow-capped range to the

east, but in the rainy season are lashed into fury by the terrific thunderstorms of this altitude.

The general rock-formation is a trap, whose terraced lines are seen far off upon the peaks, as they emerge from beneath the ice-cap. A remarkable peak of diorite stands solitary, not far from the lake-shore, and is known among the Indians by the name of Quispijahua, which means "the flower of glass." This name is due to its form, for at the summit it spreads out into almost a petal-like shape, a result partly of geological formation, and partly to its having been continually riven and split by lightning strokes. It is reverenced by the Indians, and legends have been woven around it.

The whole of this region, from Castrovirreyna on the west to Ayacucho on the east, is exceedingly rich in minerals, including silver, copper, gold, as well as salt, and in places coal — all of which, when the country becomes more known and opened up, will be valuable elements on industry. The highest elevation at which I arrived was 17,500 feet, just below the ice-cap.

After a sojourn of about two weeks in the neighbourhood, I continued my journey in a north-westerly direction. But my troubles were not yet over, for I was again attacked by the *tercianas*, and rendered unable to go on. These intermittent fevers have the characteristic of quite suddenly depriving one of one's strength, and there was nothing for it but to give up the idea of reaching the next village, and to sleep out upon the *puna*, or plateau. Fortunately, the temperature fell but little below freezing-point. During the night the *arriero* —not the former one—let the mules escape, and was obliged to follow them, leaving me alone and unable to get up for the whole of the following day. The sun blazed down, and I was consumed with thirst, and nevertheless unable to reach the shimmering blue lake which lay within 100 yards of me. At length I beheld, afar off, an Indian approaching with some llamas, and I hailed him. But, after the manner of his kind, he was afraid; and, instead of coming towards me, he quickened

his pace, and soon disappeared. I suffered greatly from thirst, and with the sun and the fever was almost delirious; and still no sign of the *arriero*. I managed to reach my saddle-bags and took a mouthful of extract of coffee, which revived me a little; but what I wanted was water. Again I saw another Indian, towards the close of day, and as he came within hearing, I called him; not this time, however, in Spanish, which might have had the same effect as before, but in the few words of Quechua which I was able to employ. "*Shami, yacu-t-apami!*" ("Come here! Bring some water!") I shouted; and the poor Indian, gathering, probably, some confidence from being addressed in his own tongue, came up to me, and, following my directions, brought me water from the lake. I rewarded him with a silver dollar, and he stayed by me until nightfall, when the *arriero* returned with other animals from the *hacienda*.

After a loss of various days, due to this fever and its results, I arrived at the city of Huancavelica, 14 leagues from Santa Inéz, and which can be accomplished in one long day's hard riding. The country passed over was the usual treeless *puna*, alternating with lakes, swamps, rocks, and streams, and generally covered with grass, which gives pasturage for herds of cattle and sheep. The climate is exhilarating, and the views magnificent, and in the intervals when the fever did not trouble me, I enjoyed the ride and the unfolding landscape.

At Huancavelica are the famous quicksilver mines, which are generally mentioned in all geological treatises. The history of the mines would fill a bulky volume. They were discovered in 1566, and were administered under a Spanish viceroy, and since that period have produced approximately 60,000 tons of mercury from the cinnabar ores, which exist in an enormous lode or *farallon*, to use the Spanish term. In 1786 bad work caused the mine to collapse, and it is stated that 500 Indian miners remained entombed therein. Huancavelica was visited and described both by Bufon and Humboldt, as also Raimondi. I penetrated into some of the vast subterranean caverns, which have been excavated to

extract the ore, and made an examination of the general conditions of the region, in order to draw up a report thereon. The workings are about 2,400 feet above the level of the cathedral and city of Huancavelica, which latter is at an elevation of 12,300 feet above sea-level. The Huancavelica river flows through the city, emptying lower down into the Mantaro, which in turn falls into the Apurimac, before mentioned, and so into the fluvial system of the Ucayali and Amazon. The Mantaro river, almost alone of Peruvian rivers, runs in this part of its course to the south-east, or directly opposite to their general north-west direction, over nearly 3° of latitude, to where its course abruptly changes near Huanta. The climate of Huancavelica is cold, but temperate. Alfalfa and cereals are not produced, owing to the altitude; and the principal industry is that of cattle, and was formerly, and some day must again become, mining. The general geological formation is limestone and sandstone, and hot springs occur, and are used as baths. I have spoken of these quicksilver mines again, elsewhere.

Leaving this remarkable place, my way lay across a lofty *puna*, some thousands of feet above the town; for, notwithstanding the marvellous wealth in minerals that the region has produced, no road had been made, beyond the primitive mule-trail, to the outside world. Such was the Spanish method of mining, from which no benefit accrued to the community, who toiled and died to enrich an arbitrary and distant monarch. The arms of Spain carved on the stone at the portals of the mine, with figures of saints, and ruined churches, are the principal remaining vestiges of this *régime*—unless, indeed, the defects inherited by the present inhabitants, of lack of enterprise and the love of officialdom, be counted as such.

Descending rapidly from this plateau, the track passed into the valley below. The change from these dreary and inclement altitudes to the warmer climate of this valley was very agreeable, especially in my still weak state. The piercing wind gives place to a balmy breeze, and the dry

grass of the *puna* changes to other vegetation. I pass a tree, and recollect *Thalaba and the Sledge*—

> "Behold! the signs of life appear,
> The first and single fir!"

It is not a fir; there are no firs on the Andes; but it is a real tree, although a wind-beaten specimen, drawing its scanty nourishment from the rocky soil, and stretching its attenuated boughs athwart the path. A tree! the first I have seen for weeks. It has green leaves; and, moreover, a bird carols in its branches. A little lower down a patch of celandines and dandelions bring to my senses a waft as from England's lanes. Here, also, are glorious masses of yellow acacia, and other flowers and shrubs on either hand, through which my mule brushes as we descend. But what is this—this sweet, familiar perfume which suddenly greets me? Familiar, although for the moment I cannot recognise it. I look about, and, behold! there it is—a low hawthorn bush in flower. Its leaves are somewhat different in form to those of English hawthorns, but there is no mistaking the well-known dark green hue and glossy sheen of the leaves, nor the little white flowers and the sweet, subtle perfume which carries the mind momentarily to another land. It is "may"!

I pass through the villages of Acobambilla and Huando, ascend and pass a high ridge, and again descend by steep and rapid zigzags down the sides of its cañon to the river Mantaro, or Jauja, before mentioned, and sleep at the town of Izcuchaca, 10 leagues of a broken, steep, and tortuous road from Huancavelica.

Izcuchaca is somewhat of a strategic point. A stone bridge crosses the river, and the place was generally early taken and held by various revolutionary forces in times past, as it commands the road to the interior of a large and important part of the country. I found the greatest difficulty in obtaining anything to eat along the whole of this route. The Indians are of a surly and suspicious character, and will sell absolutely nothing to the traveller. In Izcuchaca I had expected to find an inn and some

comforts, but the place was dominated by a Chinaman who was the gobernador, as well as the owner of the inn. This individual, due to some caprice which I was unable to explain, absolutely denied me food and shelter; and even several Peruvians of respectable appearance who were standing by failed to offer such, or indicate where it could be secured, notwithstanding that they knew I was a stranger, a traveller, and that night had fallen and a heavy rain set in. This is the only place in Peru where I have experienced such a lack of hospitality, and I retain an unpleasant impression of the place. But I found shelter at length in the hut of a humble but honest individual, who, moreover, obtained alfalfa for my animals, which was the most important, for they had eaten but little for several days. There was no food in the house, and it was too late to purchase anything in the place; and all that I and my *arriero* could obtain was a cup of weak tea and a piece of dry bread from my saddle-bags, the only food of which we partook until the following night upon arriving in Huancayo.

On the next morning, at daybreak, I shook the dust off my feet of Izcuchaca, having first rewarded the wife of the humble but honest individual with three silver dollars —perhaps more money than the family had long since possessed. Also, I did not fail to visit the Chinaman gobernador in order to give him my opinion of his methods, and which I came near to emphasising in other than verbal ways.

My way now lay along the bank of the rapid river for some distance, and leaving that I crossed another high ridge and plateau, and at length descended into the large and fertile plains of Jauja, and slept in a fairly comfortable inn within the important city of Huancayo, 13 leagues from my last stopping-place. This plain, through which runs the river Mantaro, or Jauja, which I had been more or less following, is one of the finest agricultural regions in Peru, and crops of every description are produced. Not far away are extensive and valuable mines of good coal, as well as of copper and silver.

Photo] View on the Oroya Railway. [*N. P. Edwards*

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From Huancayo to Jauja, my next day's journey, the road is flat, and passes through numerous towns and villages: which, with their cathedrals, squares, and trees, present a restful and old-world appearance. The altitude of Huancayo is 10,680 feet, and that of Jauja 11,870 feet, the distance between the two cities being 10 leagues. The small Indian shops all along this route seem to contain little but bottles of *aguardiente*, or rum; and a great deal of drunkenness is encountered among the Indian labourers.

On the morrow I began my last day's journey in the saddle. The road left the pleasant valley and wound up on to a high, cold plateau. Fourteen leagues lay between Jauja and my objective point, Oroya, the terminus of the famous Oroya railway, where I should take the train for Lima. It is a remarkable thing that the inhabitants of Jauja and of the numerous towns of the valley have been content to live through the many years since that railway was constructed without making any attempt at a road for vehicles which would give them cheap and comfortable communications thereto. The existing trail is simply a track, innocent of improvement, over the limestone strata, where the wearied pack-trains stumble ceaselessly, in the same condition almost as when the Andes were upraised from chaos. However, this is now being remedied, in the construction of a branch railway from Oroya.

The altitude of the latter place, where I arrived in the late afternoon, is 12,178 feet above sea-level, and the railway thence rises at the summit of the Andes to the west, to 15,642 feet, the highest in the world, and doubtless the only existing instance where the traveller is carried from the limit of the perpetual snow-cap to sea-level in a few hours. North of Oroya great activity is being displayed upon the famous Cerro de Pasco mines, which are pronounced to be the largest copper deposits in the world.

The region which I traversed is but little known outside the country. It is embraced between the parallels

of 11° and 14° S. lat., and 77° 10′ to 74° 45′ meridians west of Greenwich. It is a region of great resource, and will undoubtedly be the scene of an early development, for the dawn of an era of progress is upon the old empire of the Incas, awakening it from years of stagnation, and giving it place among the progressive nations of its hemisphere.

On the morrow I took the train for Lima. I had purposely hurried upon my journey, bent upon arriving in the Capital on Christmas Day, for—good reader, smile not!—the thoughts of Christmas cheer, and the society of my countrymen, had assailed me on those inhospitable steppes. Roast beef and plum-pudding! Are they not satisfactory matters for contemplation for the weary and hungry traveller?

Chola Girl of the Andes.

CHAPTER XIII

THE PERUVIAN INDIANS OF THE ANDES

AT the beginning of this chapter is the picture of a Peruvian Chola girl. It is taken from the cover of a small book on the country published in Spanish, long ago, and the artist, whoever he may have been, has certainly drawn a most typical portrait, and I have reproduced it for that reason.

The Chola Indian girl is far more typical of the country—as, indeed, are the Cholo and Quechua Indians generally — than the cultivated race and people of the cities. I am speaking now of the inhabitants of the highlands and the Cordillera; and in the face of this girl is reflected the melancholy — the unwitting melancholy, of these vast, solitary, and stupendous regions. Her simple dress, bare and brown legs and arms, and wealth of hatless hair; her semi-barbarous face, yet with much of sweetness in her glance, and her stalwart frame form a type more American — in a sense — than the pale, lovely damsels, brave in Parisian attire, of the Capital. In her eyes is the melancholy of ages, yet there is a certain coquettish disposition of her simple dress. She is seated upon a block of granite—the only chair she knows—and behind her are the everlasting hills, the virgin snow-cap, the perpetual white clothing of Andean summits. No truer child of Nature could be found.

I have continually seen splendid types of barbarous womanhood among these Cholo Indians of the Cordillera. The women of this race are exceedingly hardy, and very prolific. It is commonly related of her that at child-birth, she—alone, perhaps, in her solitary hut at the moment—

herself, gets up, goes out and collects firewood and heats water, wherewith to wash the new-born babe!

The population of the Peruvian uplands ought really to increase instead of remaining almost stationary, as it appears to do, were it not that the mortality is so great among infants. I have been informed by Peruvian medical men who have studied the subject, that the loss is 40 per cent. of births. This is due to the hard conditions of life in the mountains, and the rigorous climate, which, however, would be healthful were better food, shelter, and clothing obtainable, and hygienic methods inculcated among the inhabitants of those regions.

The Cholos, it must be here explained, are not a barbarous Indian race. They are the original Quechua Indians of the uplands, which are quite distinct from those of the tropical river and forest regions, and sometimes they have an admixture of Spanish blood. They are those who formed the great population under the Inca *régime*, and who had developed a certain civilisation. They are often of refined features, and light-coloured skin; whilst others are dark, copper-coloured, with heavier features. Nevertheless, they curiously regard the Spanish-speaking people—the dominating race—ever as interlopers and a people apart, and although they understand Spanish, they often prefer to reply in their own dialects of Quechua and Aymara. The Cholos, therefore, are not true Indians. The true Indians inhabit the warm tropical regions east of the Andes, and came neither under the dominion of the Incas nor the Spaniards, nor ever received the influence of the Roman Catholic religion. They are known as the *Barbaros*, or *Salvages*; whilst the Cholos are the most ardent supporters of the *régime* of the priests. The forest Indians are described in a subsequent chapter.

The Cholos are a docile and peaceful race. They work when they will, and rest or idle when the necessity for work does not press. Their wants are few. Most of the Cholos' clothing, and that of his woman, is made

by himself from the wool of his own sheep or alpaca. Even his white wool or felt hat, and his sandals, are his own product. He cultivates his small *chacara*, or farm, and grows sufficient maize, potatoes, and alfalfa for his own consumption, and is almost independent of current coin—save, alas! for alcohol.

It is a remarkable feature of the Peruvian Cholo that he has always been a small landed proprietor. It will be recollected that under the Inca *régime* every inhabitant had a certain area of land apportioned to him, and was obliged to work it, receiving one-third of its products. Now there is no restriction imposed upon him except some small tax, and he cultivates little more than sufficient for his requirements. This state of independence has both its good and its bad sides. It is undeniable that the citizens of a country have a right to possess or enjoy a portion of the area of its soil (notwithstanding the fact that the most civilised nations of the world have allowed this condition of primitive justice to be usurped among them). The Cholo supports himself and his family; in poverty sometimes, in comfort according to his standards, generally, and what more does he require, he might ask, did a contrary set of conditions ever occur to him. On the other hand, this independence leads to stagnation. When the Indian has no wants, or no necessity to work, there is no stimulus to advancement, no ambition, and therefore no progress either of the individual, the family, or the race.

It can hardly be said, however, that his holding does not cost him some work to secure and maintain. The little *chacaras* are built in the most difficult places often; terraced on steep hillsides, banked up between crags and rock outcroppings, and literally wrested from Nature's topographical chaos upon the Andean valley slopes. I have observed how the smallest possible places have been made use of by banking up on the lower side and digging out on the upper: a series of terraces which extend up the precipitous flanks of hills, from the valley floor, in a most remarkable way, only ending where the

ground became absolutely sterile by reason of the rock cropping, or nearly vertical from its precipitous gradient. Indeed, it is highly probable that its inaccessibility is partly the cause of his possessing it. Had it existed in places of easier access, probably it would have been confiscated by some more powerful neighbour, as in earlier days in Europe. Peru, at any rate, is saved from the reproach of its territory all being held by a handful of landlords, as in Great Britain!

Generally, an irrigation ditch marks the upper limit of these lands, keeping all green below it, in sharp contrast to the line of sterility above. I have often examined these native works of engineering, and it is remarkable how the frail open conduit is carried around rocks, built up with rubble walls, and patched with adobe clay at weak spots.

But it is less the modern than the old works of this description which attract the traveller's attention. I have elsewhere spoken of the irrigation canals of the Inca period; the *chacaras* and *andenes*, the old terraced fields of that time, cover most of the Andean slopes; the cultivable lateral and longitudinal valleys. Standing sometimes on the summits of the hills, the observer, as far as the eye can reach, beholds these once-cultivated terraces. In places they have been almost carried away by the slow action of the elements, but the practised eye does not fail to see their position, especially when the sun is low and long shadows fall upon the hill-slopes, bringing the ruined terraces into relief—a "rippled" or chequered appearance of much beauty and singularity.

The existence of these numerous works has partly given rise to the supposition that a much vaster population inhabited Peru in centuries past — 90,000,000 of people have been spoken of; and whilst undoubtedly the number of inhabitants was much greater than the 3,000,000 of the present census, still, it is doubtful if it could have reached the larger figure. Also, it is to be remembered that there was not necessarily only one *chacara* to each inhabitant, but various. These terraced

Andean Valley, shewing "Andenes."

places, as I have stated elsewhere, were termed in Spanish *andenes*, or platforms, and it is said that the name of the Andes is derived therefrom.

The Cholos lived, as stated, in the most remote and solitary places. The greater part of these uplands or *punas* are from 12,000 to 14,000 feet above sea-level. I have, on my journeys in these regions, often heard the far-off, melancholy notes of the flute or pan-pipes, and have discerned a solitary Cholo sitting on an almost inaccessible point of rock somewhere, with his herd of goats nibbling the scanty herbage on the bare hillside. Or, I see a Chola maid sitting upon an eminence near the road. She is spinning — she is always spinning, except when she is asleep — making yarn in her deft and primitive way, simply with a ball of crude wool and a little spindle a few inches long, which she incessantly twirls. Perhaps she is minding her llamas or sheep the while she spins; and her *chacara*, although you cannot see it, is among the rocks near at hand. Probably she has a child slung at her back; one at her bosom, or perhaps another in visible anticipation! For she mates early and is prolific. Perhaps she is unattached, a maiden still; and, if so—behold! there she was a moment ago spinning, spinning, and overlooking the road and the approaching stranger on horseback. Raise your eyes again—where is she now? Gone; disappeared as softly and lightly as a deer or a squirrel—and as fleetly; and, if you think you can catch her, she will laugh at you from afar! But if you stay long enough in one neighbourhood you may win her regard.

I do not know that the sentiment of love exists very strongly among these people. The Cholo attaches little importance as to the chastity of his female companion before their lot in common began. Probably he looks upon her as a sort of superior chattel, after the general custom of semi-barbarous races. Indeed, her capacities as a housewife, and whatever property she may have, in the form of cows or sheep, are more important to him. In one part of the country where I

sojourned, a curious custom of selection of a wife exists. The suitor, having declared his intentions, is permitted to live for a term of six months with the girl at the house of her parents. At the expiration of this time the father speaks to his probable son-in-law somewhat in this wise. "Get thee hence, call thy friends, make ready, we will feast, and thy wife may depart with thee." If the suitor is satisfied with the damsel, from the knowledge he has gained of her in the above period, he joyfully carries out the mandate; and all duly comes off as expected. But if, on the other hand, he is not satisfied, he informs her father of that fact; when the latter, aided by his own wife and relations, fall upon the young man and thrash him with sticks, saying: "Go forth, ungrateful one! There are not wanting others who will appreciate my daughter!" Any children resulting from this temporary union are taken care of in the house of the disappointed father-in-law.

I have spoken of the sentiment of love among these people, and probably it is a plant which would flourish with more vigour under kinder cultivation. I have observed that Chola women sometimes acquire a strong liking for foreigners; and, personally, I have found that, after some acquaintance, and on being treated as women, not as chattels, they have developed stronger feelings. I recollect a Chola girl, in one place where I stayed, who nearly lost her life in trying to do me a service. I had only employed her in the prosaic occupation of doing my washing, but had paid her promptly always, and treated her as an Englishman always treats women. Possibly I had—*quien sabe*—looked kindly at her, as man will look at a robust and well-formed girl. One evening I was writing in my lonely room, when a form intercepted the shaft of light shed by the lamp through the open door on the darkness outside, and the girl came breathlessly in, almost nude, and with water streaming from her. She had just passed the river which ran close by, and which was swollen with the rain, and had been carried off her feet, she informed me, and nearly drowned,

struggling ashore in the dark, alone. The object of this perilous performance was to inform me of a plot to steal my mules that night, which she had overheard in the village on the opposite bank of the river. Poor, brave Chola girl! How could I reward her? She wanted no reward, she said; she had done it to serve me. I gave her brandy and quinine, to ward off the *tercianas*, or malaria, which attacks one after abusing cold water in those places, and made her wrap herself in blankets, for the night was cold, and her garments had principally remained on the other side. I was able to immediately take such measures as prevented the theft of the mules, which would have been very serious.

On another occasion I was surprised at receiving amatory advances from a prepossessing young Chola woman, and found out that it was a result of the following incident. In a village near at hand a chapel had long been in course of erection; but, due to the laziness and parsimony of the Indian population, the roof had not been put on in time for the dedication by the visiting priest. The priest, angered at this neglect, took the opportunity of reading his flock a stern lecture during the celebration of mass, reproaching them, and saying: "Lazy and ungrateful ones! Notwithstanding that an eminent foreign gentleman and engineer"—referring to myself—"has come all the way from his country to visit you, you have failed to complete your chapel. What idea will this gentleman form of you?" The woman was so much impressed by the fact of my name being mentioned during the mass, that she conceived a kind of adoration or affection for me on this account, and this was the reason for her "wooing" of me!

Chola women often look very stout, but they are not necessarily so. The appearance is sometimes due to the large number of skirts they have on. This is considered an evidence of wealth, and I have seen as many as eight worn, at times. This has fallen under my observation when I have been obliged, on journeys in remote districts, to sleep in Cholo houses. There is generally but one

room, and the whole family and the traveller sleep in it, the former upon the floor, and the latter in his travelling-cot. I have often congratulated myself on having brought this, as it raised me some 18 inches above the half-dozen women, children, and man, who were my hosts, and above the other numerous inhabitants of lesser category which the place may have contained! Fortunately, in the Peruvian highlands, the traveller is above the "flea zone," if I may term it so, for fleas do not live at a greater elevation than about 8,000 feet above sea-level. Unfortunately, however, "there are others"!

One of the most objectionable vermin of the valley places is the *alacran*, or scorpion. This horrible little beast stings, and causes a bad, and sometimes fatal, poisoning. The sting is a sharp lancet in the tail, and it is a fact that the reptile stings itself and dies when unable to escape, as I have several times observed. Akin to this is the centipede, which, however, I have seen but little in Peru, although plentifully in Mexico. The scorpion inhabits old walls, and thatched roofs; and I have often seen the lace-like trail which marks his course in the dust on the floors of abandoned mine galleries.

It has sometimes been rather embarrassing to undress before a room full of women, when forced to sleep in an Indian house with the whole family; especially to one accustomed to put on his pyjamas, and when they all stare at you; but the traveller in Spanish America gets used to these and many other similar incidents of travel.

The Indians are always eager to exchange work for play, and to seize on anything in the nature of a *fiesta*, as the observance of the numerous "Saints' days" attest. The most uproarious time is that of Carnival. The absurd Carnival customs—some of which I have described elsewhere—extend even to the most remote regions and Indian villages. I had hoped to escape the boisterous affair on one occasion, being upon an expedition to the Marañon; but in vain. As I was riding slowly along,

across an almost uninhabited plateau, meditating upon anything rather than carnival, three Indian women issued from a hut, and stood in the road awaiting me. "Pardon, Caballero," they said, as I approached; and, thinking they wanted some help, or something, I drew rein. But I had scarcely opened my mouth to reply, when, "Paugh!"—a handful of flour was flung full into my face, nearly choking me, and covering me with white. The three *Amazons* then threw themselves upon me, endeavouring to drag me from the saddle and to take my saddle-bags, and with the greatest difficulty could I resist them. Fighting and pushing, with my india-rubber cape torn to strips, I drove the spurs into the mule and started off, the three viragos hanging on to the stirrups, bridle, and the animal's tail. A pretty figure we must have looked, for the women were painted, and inflamed with drink, whilst I was covered with flour. I might easily have got rid of them by striking them with my heavy riding-whip, but I could not bring myself to do this. My servant, however, had fewer scruples, for, seeing what was taking place, he had ridden rapidly up and now laid about among them with a long whip, whereupon the women let go for a moment. This was sufficient, and putting our beasts at the gallop we left them soon behind, shrieking and tearing along after us.

In all the villages I passed through during those three days—and they were numerous—the inhabitants, without exception, were marching about in painted processions, or dancing, or lying drunk by the roadside, generally gaudily decorated. In several places attempts were made—generally respectfully—to stop us; which, however, I resisted. In one small village several individuals, drunk, and brandishing bottles of brandy in one hand and clubs in the other, demanded that I should stop and drink with them, and join in their games. Weary of their threats and nonsense, I declined, when they approached with menacing gestures of their clubs; one, moreover, brandishing a machete. Without further ceremony or

parley I spurred my mule—a large, powerful animal—and jumped upon the leader of the bandits, full force. He rolled like a log upon the road, and turning upon another, I struck him a heavy blow with my revolver-butt, for I had slipped the weapon out of my pocket in case of emergencies. Away he staggered, and my servant having ridden over a third, we started away at a gallop, pursued by the whole crowd and thousands of dogs, but fortunately we outdistanced them easily. Poor, ignorant, and backward dwellers of those regions! When will the light of real progress and reason dawn upon ye?

These Cholo-Quechuas are a very superstitious people, and it is greatly for that reason that the methods of Papistry have been so easily grafted upon them, and are retained. They have curious ideas, inherited from pre-Columbian days, regarding hobgoblins, and especially spirits, which, according to them, inhabit the earth, rocks, or water, or lurk in valleys and forests. It is common in some places to observe the Cholo, when he eats his lunch on a march or out of doors, offer a little maize, meat, alcohol, or coca to the rocks: to the spirit which he supposes inhabits it. "Take, eat," he exclaims, "so that thou mayest not eat me!" When a woman, running, falls down, she hastily wraps herself in her skirt, in order that she may not become pregnant with the earth-spirit! And she always instructs her child, when it stumbles or falls, to snatch up and place a little earth in its mouth. "Eat first; so as to prevent it eating thee," she says.

In some districts there is held to exist an imaginary being known as a *Pistaco*, and foreigners are sometimes supposed to embody it. I recollect on one occasion that I required a guide to conduct me across the Cordillera, and I sent my boy to secure one. Impossible! For some reason the word had gone round that I was a *Pistaco*! None would accompany me; they feared that I "would cut them in small pieces and throw them into the river"! At length, under promise of good pay,

I secured an unwilling individual. He took leave of wife and family, embracing them, and charged his friends with their care, and we set out, he keeping far ahead upon the road, until we reached the summit. When the noon hour arrived I called him, and with difficulty I made him approach, conversing with him, and telling him that he might return home now. I also made him eat some of my lunch, and then, paying him his due, with something over, I dismissed him. The poor fellow was astonished at this treatment, and departed joyfully, and I afterwards heard that on arriving home he had called his friends together, and, showing them his neck, said: "Look, I am uninjured; the *misti* (gentleman) has done nothing evil to me!"

Another curious idea or superstition in certain places is that the Government constantly requires "human tallow" for greasing the soldiers' carbines, and that the gobernadores are sometimes commissioned to have Indians killed and boiled down for this purpose. They also greatly fear any kind of machinery, until they are used to it, fearing that the *Pistaco* dwells therein, and also requires human tallow for lubrication. A friend of mine, who had a small mill in a certain region, informed me that an Indian had approached him on the previous day, saying that he had an enemy he desired to be rid of. "He is a fat man, and would yield, were he boiled down, a large quantity of human tallow," he had said. How this remarkable idea arose I do not know, but it is generally stated to have been an invention of the Spaniards.

The Cholo-Quechua Indians are of a poetical and melancholy habit of thought, although often happy and simple as children. They are fond of music, and they have even invented a species of national piece, well-known in Peru, and termed the *Yavari*. Their chief instruments are pan-pipes and flutes. Among the ancient dwellings of the "Gentiles," described elsewhere, there is a hill covered with ruins, near Huantar, and which is still known by the name meaning "the hill of the flute."

It was so called because the tribe inhabiting it had installed large flutes in the high apertures of the rock, which, due to the draught blowing up from some cave below, gave forth a continuous, mournful sound, which was heard far and wide by the tribes on the adjacent hills.

An exceedingly curious and mournful sound is produced by the playing of the flute inside a large earthen pot, or *olla*. This strange melody is practised much in some regions; and Ricardo Palma, a Peruvian writer, tells an affecting story of a young priest, which this matter brings to mind. The priest passionately loved a beautiful Indian girl, who lived with him as his mistress. On a certain occasion he was called away to a distant region, and during his absence the girl fell ill, and died a few hours before his return. Overcome with the most poignant grief, he shut himself in the habitation with the dead body, and refused to hold communication with the outside world. By day and night, intermittently floating on the wind, the mournful sound of the flute played inside the *olla* was heard by the neighbours for more than eight days, when it was heard no more. The door was at length broken open, and they entered. The young priest was lying on the couch with the form of his beloved in his arms—dead also.

During my enforced sojourn in remote places I have often lent ear to the curious and poetical folk-lore of these people, who delight in such; and the gobernadores and priests, whose guests I have often been, have beguiled the hours with me in anecdote and story. Sometimes, although not a good *raconteur*, and it being also not easy to relate such matters in a foreign language, I have recounted stories from English literature to them. I recollect that on one occasion the gobernador was reduced to tears at my recital of the story of the "Mistletoe Bough"—the story of Christmas-time memories. He was much affected at the description of the finding of the skeleton and tattered wedding dress years afterwards in the old chest.

The Quechua and Aymara languages, which differ from each other somewhat, but have, nevertheless, much of similarity, are quite poetical in their words and the ideas they express. I recollect an old Cholo Indian who came along one evening with his flute, poor, and asking food and shelter. He sang us songs low and musical, to his own accompaniment, in Quechua—*extempore* songs, said the people at whose *hacienda* I was—and he desired to sing one in my honour, which he did, *extempore*, with a pretty refrain repeated at the end of each verse. This refrain they translated for me into Spanish, and the burden of it was that the *misti* (myself) "had come from a far country, here, his only lamp being the moon."

The word *misti* is a Quechua word meaning *Señor*, or "Gentleman," and is applied by the Indians to a superior. When you ask one of these people their opinion of the probable course of the weather, and it happens to look a little stormy, he sometimes replies: "*Misti manchachi*," which means to say that it will be a shower only; that is, it will be something that will perturb a *misti*, but would not bother an Indian!

The Indians of the Andean regions often give very appropriate names to places, at times even poetical ones. I have always enquired carefully into the names of places, and have written them with the Spanish spelling, when possible. It is generally to be found that all places—such as hills or valleys or any abrupt topographical change—has its Indian name whenever there are any inhabitants in the region. On one occasion I required the name of a certain hill, in order to mark it on the map of some mining concessions I had taken, near the Upper Marañon. There appeared to be no name, or no one who could give it, but at length I found a solitary Indian house, with its occupant of an old Cholo Indian, close at hand. He knew the name of the hill well enough, and its signification in English was, "House of the winds," or perhaps better expressed, "Abiding-place of the wind-god." Singularly appropriate it was, for it was a high and wind-swept place. Not far away was another hill, where

the Indians had driven galleries into the gravel to extract gold. On enquiring its name, I was informed that it was called *Puma-Chupan*—Quechua for "lion's tail"; and, really, on observing the contour of the hill, it seemed to have a form which suggested the name—tapering off in a curve. Speaking of the term *puma*, it is to be noted that the Quechua language has given us this word in English. Nor is this the only one derived from that source, for we also use *pampa* in speaking of South American plains land. Other words of Peruvian origin used in, or adapted to, English are the names of products, such as cocaine, from coca, cocoa, quinine, and others, also condor; and the word "jerked," applied to dried beef, is a corruption of the Chilian Indian term *Charqui*. Alpaca, Vicuña, and Llama are, also, Quechua words.

Most of the Indian names of places—and they are all preserved on present maps—are due to topographical or climatological nomenclature, and their explanation is generally forthcoming to the traveller who enquires of the inhabitants of the particular spot, or studies a Quechua dictionary.

I have always felt drawn towards these poor people. I should like to alleviate their hard lot, if it were possible. They have many good qualities, which cannot, however, expand under the existing *régime*, unless the Peruvians who govern them make some advance in their methods. They are too often ill-treated and exploited, and kept in ignorance. Let me translate from a recent number of the *Comercio*—leading newspaper of Lima—in this connection, in order that my statements may not be criticised as exaggerated. Under the heading, "Exactions against the Indians," the paper says:

"It is not rare, unfortunately, in the Republic, that the authorities of all kinds raise up abuses as supreme law against the villages of the interior. For the Indians of the mountain and the *punas*, and even of regions nearer the coast, there often exists neither the Constitution nor positive rights. It would be useless to seek in the indigenous race beings really free, and

masters of their acts and persons. It looks as though independence had only been saved for the dweller of the coast! From the moment that the traveller's view ceases to observe the ocean, and is directed over the interminable chain of the Andes, it ceases also to observe free men, the citizens of an independent republic! To this condition—which is not abnormal, because it has always existed—the ignorance of the Indian contributes, but also the abuses of the authorities, who, with rare exceptions, make of them objects of odious spoliation. Such depredations are aggravated when its victims are unfortunate and unhappy beings, towards whom there is every obligation to protect, and not to exploit."

Of course, the Indian's lot is better under the Republic than it was in the Colonial days of Spain. They are not slaves, and forced work is not legally permitted. The evils to which they are principally subject at present apart from the matters of priestcraft and alcohol, are: abuse of power by the petty authorities, including the defrauding them of part, or all, of their wages, when under employ; false imprisonment; abuses connected with conscription; confiscation of their property; fraud in selling to or buying from them; in fact, petty oppression of all kinds. For his part the Indian is, or becomes, lying, tricky, lazy, and dishonest. Improvement must to some extent be mutual, but must begin with the authorities. What is the remedy? A higher standard in these authorities should be inaugurated. The Central Government should create and maintain a civil service, and endeavour to form a body of small rulers such as render such splendid service to Britain, in such countries as India, and other dependencies; and last, but not least, immigration must be brought about, in order to change the stagnation of the existing condition, by bringing in influences and new ideas from the outside.

CHAPTER XIV

THE CHURCH IN PERU

In considering the conditions of the Roman Catholic Church in South America, and the priests which officiate there, the observer should strive to be impartial in his criticism. It must be borne in mind that the Church is an organisation which was primarily established for good; and, really, it is necessary at times to remind oneself of the fact. It is an organisation with a complicated and powerful machinery, which, whatever its defects, could not be hastily replaced by another system, supposing it were suddenly banished. It is, in Peru, a restraining authority, especially among the semi-savage population of Indians, and as such performs certain useful functions. It is also the religion of an intelligent upper class, and as such may not be too hastily considered. As a restraining and organising device, therefore, exist its principal merits; and as a medium of real religious thought and a vehicle for the teachings and operations of truth and reason, it is perhaps not much more faulty than other systems in other countries and Churches.

It is necessary to make the above admission, and to bear it in mind, lest the criticism of the traveller and observer become altogether harsh and denunciatory; and so having taken up this neutral stand, let us examine the conditions under which the system lives, and the machinery operates.

In the interior towns, away from the Capital, the church or temple is a structure of *adobe*, or sun-dried earthen bricks. This material does not lend itself to any form of architectural beauty; nor is the knowledge

of architecture possessed by those who are, or were, responsible for its erection, of an advanced order. At a distance these edifices possess a certain picturesque appearance; they have an air of romance and antiquity, such as is not possessed, for example, by the prosaic wooden or iron structures found in small interior towns in North America. Their whitewashed earthen walls, and red-tiled or thatched roofs, blend into harmony with their surroundings, as the traveller approaches; and, surmounted by the blue sky of the uplands, and perhaps backed by the white and shining peaks of some snow-capped Cordillera, they form features of man's handiwork in the landscape which are restful to the eye, and of seeming promise.

But, alas! on approaching, these features are found to have been but the enchantment which distance lends. The buildings are primitive and tawdry; their exteriors ill-proportioned, and their parts badly executed. Both lack of skill and lack of care are evident in their construction.

In the interior, paint and tinsel, gaudy images and unclean mirrors, rob the whole of that air of dignity, and banish the sentiment of reverence which houses reared to God possess and inspire in the mind of the observer under other conditions. Here are glass cases enclosing painted, tawdry, and simpering dolls; here are hideous life-sized figures with crowns of thorns upon their brows and modelled clots of blood upon their ghastly semblances. Here are rudely-constructed crucifixes and badly-painted pictures, dirty walls and floors, gaudy altars and multitudinous candles; tumbledown confessional boxes, and rickety furniture, often carelessly improvised from unsuitable material. Here are all the foolish trappings and machinery of what scarcely seems less than idolatry and superstition, and which helps to keep in domination and ignorance the unfortunate votaries of these semi-barbarous regions, and serves as the medium, often, for their cynical exploitation. Alas! for the name of religion; for the easy credulity of poor mankind, and

for the stupidity and duplicity—both—of priestcraft. A prey to depression, and with a note of protest uselessly registering itself in his mind, the observer leaves the building, passing between the crowd of ignorant and dirty Indian "worshippers" grovelling upon the floor.

Again outside, he ponders on the friable and "temporary" appearing material of which the edifices are constructed. They are not monuments of beauty and stability which could endure for centuries, and remain as eloquent witnesses—at least, to the sincerity of those who reared them; they are not legacies left to generations to come, such as the sculptured temples of Britain and Europe; and they seem to bear upon them the stamp of early perishableness, as if the methods and ideals which they shelter, should endure but a brief span upon the pages of the future.

Is this criticism not too harsh? It does not seem so if we judge the matter in the light of an ideal of truth and common-sense, but it seems harsh if we look at it in comparison with the temples in our own country. Behold the churches in our towns! Are they not sometimes the abode of curious rites and priestly appurtenances, of draperies, candles, genuflexions, affectations, and singular and mysterious operations? If churches exist at all in their present form they must, presumably, have these accessories, and between those of one country and another, then use or abuse is only a question of degree. If the buildings, which in Britain shelter them, are more beautiful architecturally, and are of greater permanence as structures, this is due to their having been erected by richer and cleverer communities. The sculptured stone upon which the artists of past centuries lavished their love and skill have, it is true, little counterpart in the poorer structures of Spanish-American interior towns. But it must be remembered that these have often been raised by the united efforts of poor Indians, who give their time and work as a labour of love thereto. Often, on the beams and rafters of the roof, one observes the names of their constructors—poor and simple Indian

carpenters—burned into the wood-work in rude letters, setting forth the date and occasion, and generally accompanied by some devout phrase. The widow's mite!

It is not to be supposed that all the temples of the country are of the above primitive nature, however; the cathedrals of the Capitals, principally Lima, Trujillo, and Arequipa, are large, handsome, and durable buildings, with chaste interiors, and, saving earthquakes, may last for ever.

It is a debatable point with the traveller, whether he shall describe and criticise the religious matters of a community, or whether he shall let the subject entirely alone. It is a delicate subject. By nothing are a people more easily offended; and in nothing is the critic more likely to fall into a denunciatory line of thought or expression. It is especially difficult to the student of science to avoid condemning when the subject of his criticism is the religion of Roman Catholic countries, and, above all, of those which bear the stamp of Spain. But, as before stated, the thinker and true observer must be a universalist. He will strive ever to see the good in these things, as well as, or in superior relation to, their defects. To him, nothing can be utterly condemned, for he ever—

> "Trusts that, somehow, good
> Will be the final goal of ill!"

Treated as a matter of courtesy, the foreign critic need have no scruples, however, with regard to his handling of Roman Catholicism. Whatever happens he is a "heretic"!

The careful observation of the traveller in the interior of Peru regarding religious practices will, it may be stated at the outset, lead him to conclusions which can be but little short of condemnatory. His scruples will, moreover, be less when it is seen that there are no stronger critics of the priests, in their country, than the Peruvians themselves.

If it were possible to lay bare the inmost thoughts

of a great many of these clericals it seems probable that it would be seen that they look upon their profession principally from the point of view of expediency; or as a means to their own living and enrichment. For, it is incredible that a body of men, if they were of righteous ways of thought, or philosophical, or ordinarily intelligent, could follow the methods which they adopt, or perpetuate the singular mediæval customs which do duty for religion. There are, of course, exceptions, especially among the self-sacrificing missionary priests who live among the savages of the Montaña or region of the forests.

But it is only a truism to state that a country whose national religion is Roman Catholicism is handicapped from the very beginning, in its social and industrial development. Whatever may be the true principle of this religious system, its methods are antagonistic to progress; the fact is rendered evident by an examination of any of these nations. Inexplicable, truly, are the operations of destiny, or whatever term may be applied to the workings of circumstance, that this old religion of an old age and of the Old World should have been transplanted to this virgin soil of the New World, there to so long detain the hands of time and progress.

The total number of priests at present in the country must be difficult to estimate, for they are continually arriving from other countries, especially from France, Italy, and Spain. To the Briton, accustomed to the refined and educated clergy of his own country and Church, the appearance and methods of the *curas* of Spanish America is a matter for surprise. In the interior towns of Peru (and other similar countries) the *cura* is often an individual of unprepossessing appearance; sometimes dressed in a slovenly manner, unshaven, probably unwashed, and living on and exploiting the poor Indians in a way difficult to realise in a more civilised country. These priests often become exceedingly wealthy, due to the contributions which they exact from the Indians. They possess lands, flocks, and herds, and even mines;

Religious Procession near Huaraz.

and this even in the very poorest communities, at times.

In one of my journeys I stopped at a little village at the foot of the Andes, one evening. The topic of conversation for the moment among the people there was regarding a "deal" which had just been performed by the *cura*. This worthy had long had his eye on a fine herd of forty bullocks, belonging to an old woman who lived near by. The old soul was ill, and thought she was about to die, and the enterprising priest had just "concluded a treaty" in which she made the herd of bullocks over to him, receiving in return "the road to heaven"! I was unable to find out whether any document accompanied this exchange, or whether it was only verbal; but the woman had recovered, and was now demanding her bullocks back again!

On another occasion I was riding along a road which passed through well-cultivated fields and plantations. I asked my boy to whom they belonged, and he replied: "They are the property of the *cura*, Señor." I rode on for a space; other fine plantations lined the road on either hand, and again I asked who was the owner. "They belong to the *cura* now, Señor," he again replied. Some distance further on a well-built house was seen, by the roadside, and as I passed a pretty girl appeared at the door, and smiled. "Whose is this house?" I again asked my servant; and again came the same reply: "It is the *cura's*, Señor." "And whose is that nice-looking girl there?" I continued to interrogate, as I eyed the smiling damsel. "Oh, she belongs to the *cura*, Señor," he stolidly replied. I put spurs to my horse and departed at a gallop, without drawing rein until I had arrived far beyond the limits of the *cura's* jurisdiction!

The law requiring celibacy among the priests in Peru is honoured in the breach rather than in the observance. In the interior towns and small villages they often live openly with their families. This, to an Englishman, of course, is remarkable only as being a breach of the principles to which they are supposed to conform. To

the philosophical mind, or even to the rulings of ordinary common-sense, it is only censurable for the same reason. The fatuous ordinance which would condemn men to live without women entirely defeats its own end, and creates evils which are far-reaching. The immorality of the *curas*, in many places, is so common as scarcely to call for comment among the inhabitants of the place; and any allusion to the matter of their wives only induces a smile or a shrug of the shoulders. The female companion of a priest has no standing socially; and if she is not openly ostracised by the people among whom she dwells, she is nevertheless regarded askance, as are, also, her offspring, who are commonly termed "*Anti-Cristo*"!

These priests, notwithstanding their failings, are generally hospitable. I have often arrived with my men and animals at a place where I knew absolutely no one. In such cases I have gone direct to the house of the priest in order to secure food and lodging, for, it need scarcely be stated, there are no hotels. They have always brought forth the best they had, and conversed intelligently upon the topics of the day; and I retain many pleasant recollections of my stay in their houses. The civil administration of these places consists of a Gobernador—rather a high-sounding name for the type of individual who generally performs the office; and these are sometimes not able to put very much before the traveller in the way of comfort. The priest is generally the best-educated person in the place, and the power he exercises is autocratic.

These two elements—the civil, as represented by the gobernador, and the ecclesiastical, represented by the *cura*—are often in considerable friction. This is not an undesirable condition, for, otherwise, either one would become too absolute; and it preserves a species of equilibrium in the social state of their primitive communities.

The Church is a heavy load for Peru. That is to say, it is the same load which all countries whose destiny it has been to exist under the Church of Rome have to bear. Unfortunate destiny, it were more true to say, for all

these papist-dominated communities, in whatever part of the world, show the retarding action of the load they bear. Does it yield any corresponding advantages? Observation shows that it does. The deeply religious practices of the women in Spanish America inculcate a strong sense of refinement; vulgar women, such as the Anglo-Saxon type produces, are unknown in Spanish America. The upper class is refined and proud; the lower modest and respectful. Also, the condition known as "race suicide" obtains no foothold in these communities, nor is it likely to do so whilst the women remain influenced by this religion. But it does not inculcate morality generally. Spanish-American women have, probably, a less sense of honour than Anglo-Saxon as regards relations between the sexes; and marital fidelity seems to be less strong. They are much more creatures of impulse than the women of more northern nations.

The tendency of the Roman Catholic religion is to keep its world stationary, to endure the evils it has in stagnant peace, rather than to go on to "evils which it wots not of"; evils of development, which must be passed by mankind on his road to good. For without change and experience there is no progress, and that part of mankind which fears to pass the milestones of evolution, must ever remain secondary in the world's advancement.

CHAPTER XV

THE HIGH ANDEAN PLATEAUX

I HAVE before remarked upon the structure of the Andes, and the influence of the different regions of the Andean territory upon the races which inhabit the country.

The traveller, after gaining some knowledge of Peru, and the similar bordering countries of South America, finds himself naturally referring all places to their altitude. If such and such a town, place, mine, or region is mentioned, his first idea is to ask what is its altitude above sea-level, for this will at once determine its prime characteristics, such as climate, rainfall, heat or cold, means or methods of communication, provisions, and so forth; and this directs his choice of clothing, and, in short, all the preparations he must make to visit it. As regards weather in the Cordilleran regions, he may take it as an axiom never to go without his impermeable riding cape, and thick woollen *ponchos*. However fair the heavens are at starting, they may at any moment pour out their floods of rain and hail. A Peruvian proverb runs in this wise: "A dog's limping, a woman's pouting, and a Cordilleran sky: be ye ever doubting!"

Peru has been likened to a sheet of notepaper crumpled up in the hand and allowed to open; and, indeed, the Andean region is so crumpled, so broken up into ridges and valleys, and sub-ridges and sub-valleys, in every conceivable direction, that the traveller often wonders where are the "flat" places. Moreover, the first essential for a large civilised population is the existence of large, "flat" places; and I have before remarked that Nature is still at work here in preparing the land for

THE HIGH PLATEAUX: HEAD OF A VALLEY, AND INCA RUINS.

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habitation. Her elements work day and night to that end. The crests of mountains are worn away, particle by particle, and carried down to the streams and rivers to form new plains. I have observed the slopes of the hills veritably groaning and disintegrating under the action of the elements, at times, and this is no figure of speech. For example, after a snow-storm and frost a hot sun comes out. The snow thaws; the rocks split; flakes of stone and soil fall down the slopes with audible noise and visible movement. The limestones are also pitted in curious forms by the action of acids in the air and water; the granites disintegrate and form sand, or the remarkable spherical shapes which at times are seen, giving the slopes the appearance of great fields strewn with skulls. These become detached, and roll down to the stream beds, or go to pieces in their characteristic onion-like peeling process. The porphyries, at times, form the most remarkable groups of natural sculpture, which almost startle the horseman, as, in a reverie, he descends the winding trail among them. I recollect one statue of a gigantic friar with a cowl, which I used to pass regularly for some time at a certain place. The quartzites last the longest; they only fall away in blocks, and do not decompose, but are slowly ground to sand by their mutual friction under the action of moving water. In Peru I have observed a curious and elegant form of lichen, which I have never seen on any other rocks than the quartzite, and I could generally distinguish this particular kind of stone for that reason before examining a clean fracture.

Earthquakes here are also destructive and constructive in their effect. In one part of the Andean Cordillera, where I stayed for some months, I almost daily recorded slight shocks, and continuously observed new boulders upon the paths or stream beds which had been brought down by this agency during the night. In short, the traveller has continually before him the most striking object-lesson of the forces of Nature at work in her rebuilding.

The hydrographic structure and functions of the Andes have already been touched upon. The Andes may be considered as a mighty machine which collects and stores up water on its summits in the form of permanent ice, as the ice- and snow-cap, which, ever thawing on its lower edge, gives birth to the streams which flow down both eastern and western slopes. The value of the Andes as an "hydraulic machine" will in the future be more and more taken into account; for its powers are very evident to the observations of the engineer who travels there. Water-power will be developed on a large scale some day, and hydro-electric stations established which will supply mines, manufactories, and agriculture, with mechanical energy, as is being done so largely in Italy, Switzerland, California, Africa, etc. The value of this source of energy is considerable; the streams which flow down the western or Pacific slope have a very rapid fall in a short trajectory, and although their volumes are not generally large, nevertheless they form both a source of energy and a supply for irrigation purposes. As an example, the river Rimac, which is born in the ice-cap and descends the western slope of the Cordillera, flowing through Lima and debouching at Callao, has a trajectory only about 100 miles long, and a fall of something like 14,000 feet, from its source. The other rivers of Peru which flow to the Pacific have more or less similar conditions as regards their trajectory. They are about forty-nine in number, but some of them are but small streams in the dry season. In several instances, cities are lighted electrically from hydro-electric stations on these rivers, as Lima, Arequipa, Trujillo; and in the former an extensive electric street-car system is working from this source of energy.

A remarkable feature of the hydrography of the country, and of which I have spoken elsewhere, is that of the Andean lakes. These are generally in and among the tablelands—the *punas* or *altiplanicies*, at an altitude above the sea-level of 12,000 feet to 15,000 feet, or more. I have described some of these elsewhere. They are fed

by the heavy rainfall of those regions, and in some cases by the thawing of the lower edge of the ice-cap. Among the most notable of these is the famous lake Titicaca, 12,370 feet altitude, 165 miles long, and an average of 63 broad. This great inland sea, in conjunction with Lake Poopo and the Desaguadero river, in Bolivia, forms its own hydrographic system, and has no outlet. Lake Arapa discharges into it, and there are other smaller sheets of water forming part of the same system, and which I have spoken of elsewhere. Evaporation is the only agency of exhaustion of this system.

Next, may be considered the series of Andean lakes which are the sources of rivers, as Conococha, from which rises the river Santa or Huaraz, flowing to the Pacific; Lauricocha, source of the Marañon (see note in former chapter); Chinchai-cocha, or Junin, 9 leagues long and 2 wide, source of the Mantaro river; Orcococha and Choclococha, source of the Pampas river; Langui of the Urubamba; Vilafro of the Apurimac; Lake Parincochas, etc.—most of which I have visited. The word *Cocha* is Quechua for *Lake.*

Besides these there are innumerable smaller lakes upon these high *punas*, wherever the traveller may journey, and which form natural reservoirs, often without any outlet. Bordering upon them are extensive swamps and bogs, where, without a guide, disaster would be encountered. The existence of these great areas of swamp and lack of natural drainage seems to be due to impermeable underlying strata of quartzite, or other rock, which permits no percolation of the waters to lower elevations, from these numerous basin-shaped areas.

Other great lakes have formerly existed in some of the longitudinal valleys, which have broken down their enclosing natural dams, and so drained themselves. Among these are those which existed in former epochs, in the Jauja and Huancayo valleys, and which opened a way for themselves at Izcuchaca, and broke through the eastern Cordillera, to the Amazon. Similar conditions

attended the lake-basins of the Huallaga and Marañon rivers.

Whilst the Andes are generally divided into two parallel ranges, termed the Eastern and Western Cordilleras, respectively, the true "Cordillera," it ever seems to me, must be considered that whose summit forms the actual *divortia aquarum* of the system and the continent. The passage over these summits must be made ever at an altitude of 13,000 to 14,000 feet above sea-level, with — as far as Peru is concerned, in her 1,500 miles of Cordillera — only one exception. This is in the northern part of the country, the Department of Piura, and embodies several remarkably low gaps in the Cordillera of the Andes varying from 6,000 to 7,000 feet in altitude, above sea-level. The summit or pass is here about 100 miles from the coast of the Pacific; and in my preliminary report, written in July 1906, upon the project for a railway uniting the ocean with the navigable head-waters of the Amazon, I have said:

"Leaving the Port (Payta), and traversing eastwardly the flat coast-zone, the line will reach the Andes, and ascending the western slope will cross the summit at an altitude above sea-level of about 6,600 feet, by means of a pass which seems almost to have been made by Nature, in order that man might create a way of travel between the world's greatest ocean and vastest river, crossing one of the highest mountain ranges of the globe; for, in all the 1,500 miles of Peruvian Cordillera there is no pass at a less altitude than 13,500 feet."

This fact will be rendered more palpable when it is recollected that the two existing trans-Andean railways cross at 15,642 and 14,666 feet, respectively.

There is a small village church at Huarmaca—on the summit near this point—where it is proposed to cross to the Marañon exactly on the line of the *divortia aquarum*; and the water which is shed from the falling rain on the one side of the roof goes to the Pacific Ocean, whilst that on the other flows to the Atlantic.

On the Summit of the Andes.

Summit of the Andes.

As affording a general idea of the remarkable altitudes at which people live in the Peruvian cities of the Andean region, I will give some figures of the elevations above sea-level of some of the Capitals of the Departments, or States, with their distances from Lima, as follows:

Cities	Altitude in feet	Distance from Lima in miles
Cerro de Pasco	14,380	174
Puno	12,645	825
Huancavelica	12,530	219
Cuzco	11,445	567
Huaraz	9,930	192
Ayacucho	9,216	315
Cajamarca	9,440	474
Abancay	8,060	471
Arequipa	7,850	666

The climate of these places is cold, and often rainy, but healthy and invigorating, and produces a more energetic people than that of the coast cities. Some of them are situated in mining regions, and have been described elsewhere. The *arriero*, or pack-mule train driver, living in these high regions, greatly objects to journey to the coast; and the *serranos*, as the inhabitants are termed, generally fall a prey to light fevers or *tercianas* when they make these journeys to Lima, or other coast points.

Conversely, the dweller in the mild and changeless temperature and sunny climate of the coast dislikes to ascend and encounter the—to him—inclement conditions of the uplands.

These coast cities form a striking contrast in their lower elevation, as shown below by the respective figures of some of the principal ones.

City	Altitude in feet	Distance from Lima in miles
Callao	Sea-level	6
Trujillo	370	339
Ica	1,335	174
Chiclayo	82	456
Piura	174	612

Intermediary between the two foregoing lists, in point of altitude, and generally enjoying a delightful climate which in some cases may be described, without too much exaggeration, as "perpetual spring," are such cities and towns as Moyobamba, Chachapoyas, Moquegua, Hunauco, Yungay, etc. The profiles of the Andes, which I give, will render evident the striking changes of altitude which the traveller encounters in his journeys, and the great barrier which these mountains present to communication between the coast-zone and the region of the forests. These profiles are taken at considerable distances apart, aggregating about 1,000 miles, and are about normal to the coast-line and main axis of the Cordillera. Beginning towards the north, we have a section through the Andes from the coast between Eten and Payta, passing the summit at Huarmaca — which, as has been explained, is the lowest point in the Peruvian Andes—and down to the river Marañon at the junction with the Amazon, whence steam navigation begins.

The second, southwards, is through Salavery, Trujillo—the summit—and down to and beyond the Marañon.

Third: through Huaraz and the valley of Huaylas; the Marañon and Huallagas rivers.

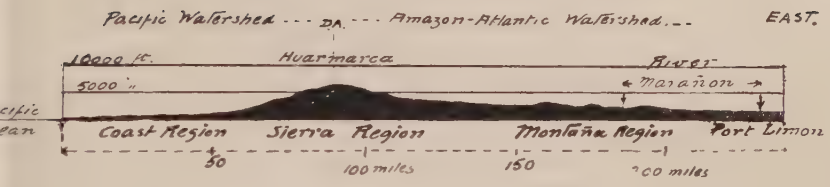
Fourth: through Callao, Lima, Oroya, and down to the Ucayali. The Central Railway runs eastwardly as far as Oroya.

Fifth: through Pisco, Santa Ynez, Ayacucho, and the Apurimac.

Sixth: through Mollendo, Arequipa, Titicaca, and the Montaña. The Southern Railway runs as far eastwardly as Titicaca.

The line of perpetual snow in the Andes, or the lower edge of the ice-cap, appears to become lower as one approaches the northern part of the chain. It would rather have been supposed that the reverse would be the case, as in going northward the equator is, of course, being

Profiles of the Peruvian Andes



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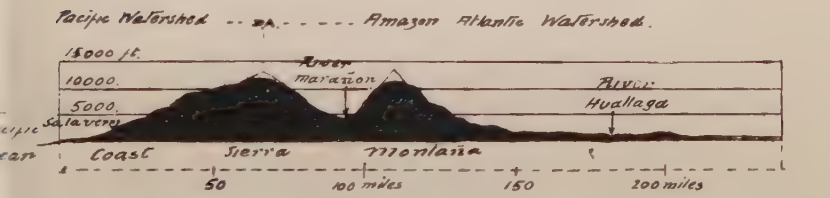

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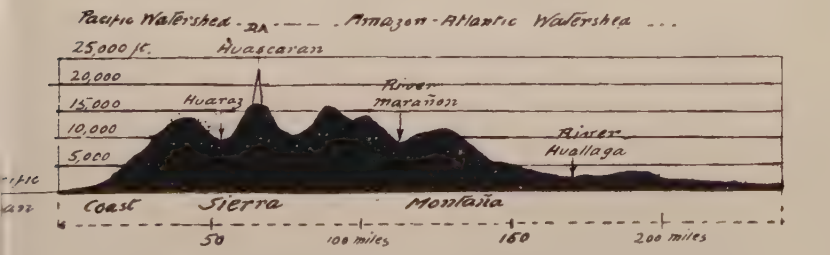
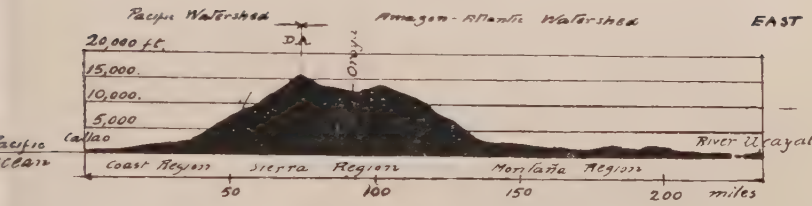


No 3.

Distances in miles
Altitudes in feet above sea-level.
D.A signifies Divortia Aquarum

C.R.E.

Profiles of the Peruvian Andes



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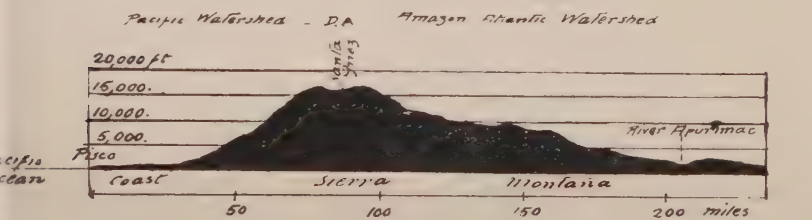

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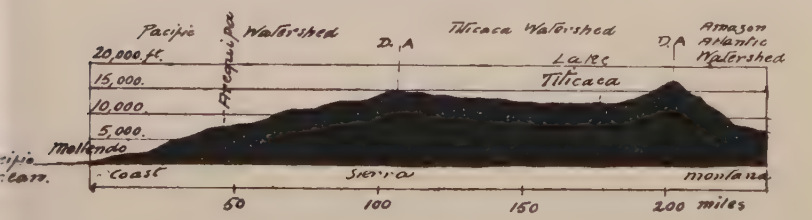


No 6

Distances in miles
Altitudes in feet above sea-level
D.A. signifies Divortia Aquarum

C.R.E.

approached. This, at any rate, seems to be shown by the altitudes of points which I have visited, as follows:

Place	Altitude of snow-line in feet	Approximate S. Latitude
Colluahuasi[1] (no snow-line)	17,000	20°00′
Misti „ „	19,000	16°10
Aricoma	16,500	14°30′
Santa Ynez	17,500	13°20′
Huarapasca	14,775	10°00
Yanashallas	14,650	9°40
Mataraju (glacier)	13,300	9°25
Huascaran	14,400	9°05

Whether the number of points observed is really sufficient to form a general result, or whether the respective heights are only due to some local influence, I am not prepared to decide. In this connection it is to be recollected that the height of the perpetual snow-line varies much, due to local conditions. For example, the volcano Misti, near Arequipa—19,000 feet—has no permanent ice-cap; whilst Sara-Sara, Solimana, and Coropuna, not very greatly to the north of Arequipa, have a very low snow-line. These are, however, all isolated peaks.

It seems to be a matter of general opinion in these regions, among the inhabitants of the *puna* towns, that the snow-cap has been retiring of recent decades; and this really seems to be borne out by the appearance of the moraines and *débris* at their lower edges. The ice-cap seems to have extended further down the slopes at no very distant period. Whether this is only part of a recurring phase of retirement, or whether of a permanent diminishing, it would, of course, be impossible to say without observations extending over the corresponding periods. But the latter seems the more probable.

One of the most remarkable characteristics of these high places in the Andes is the *soroche*: the uncomfortable and even dangerous effect of lack of oxygen and rarefaction of the air, due to altitude. In many places it is impossible to advance, when on foot, at more than the slowest walking pace, and even then the heart beats

[1] Province of Tarapacá, Chile.

violently and the head swims. The most common symptoms are severe headache, accompanied by vomiting, although these are not necessarily always present.

I shall never forget some of my own experiences in this respect. On one occasion I was examining some mines at an altitude of 17,000 feet, when a strong wind blew my hat off. Seeing that it was rolling away towards a precipice, and would be lost, I foolishly ran after it. I had run about fifty yards, when I felt a sudden suspension of all my powers: a terrible faintness at the heart and weakness of the limbs. I recollect murmuring to myself: "This is death; I am really dying!" and then the ground rose up and struck me—I mean that was the impression created—not one of falling—although I scarcely felt the blow before utterly losing consciousness. When I came to, my friends had propped me up and were forcing some brandy between my teeth. "You fell like a man shot," they said, "throwing your arms up in the air and falling inert; dead in the act."

On another occasion I arrived late at night on horseback at a certain place, of about similar altitude. A bitter and searching wind swept across the mountains, and probably helped to induce the *soroche* which came on, striking upon the back of my head. This time it took the form of excruciating headache, which, after lasting several hours, was only eased by the severe vomiting which followed. The effect was very weakening, and required a couple of days in bed to overcome it.

Fortunately, I found I could always avoid the *soroche* by careful methods, and in any case I became accustomed to the altitude and rarefaction after a few days, when I could ascend on foot the highest and most difficult places without inconvenience. Not so with many other persons. I have seen men brought down to lower altitudes, who had gone up a few days previously, on stretchers, crying that they were dying, and suffering exceedingly.

It is nearly always the case with persons who travel on the Oroya railway from Lima, that they suffer from *soroche*—headache and vomiting—when the train nears the

The High Plateaux: Retiring Snow-cap.

summit. This is, however, rather a severe test, for the passengers are taken from sea-level to an altitude of 15,642 feet in a few hours — the only instance in the world, I believe, where such is possible. I have seen a car full of passengers, unwell, and reminding me of a deck-load of sea-sick people. In some cases blood issues from the nose and ears.

The remedies which I have found most efficacious against *soroche* are, first, of course, to go about as gently and collectedly as possible, and to keep the head and neck thoroughly protected from the wind. For this purpose I have found the long fur boas, made of vicuña fur, and which are obtainable in some places, most useful and comforting. These can be wound twice round the neck. Also, the knitted woollen masks or head-coverings which the Indians of the highlands make and use, are excellent. They cover the whole of the head, leaving the eyes, nose and mouth free.

It is generally advised that alcohol be avoided and that little food be consumed, although the very opposite advice is also given by some. Personally, I find it better to abstain both from alcohol and tobacco, and consider that alcohol is harmful under such circumstances. Other internal remedies seem to be the brown sugar I have spoken of elsewhere, and *ajos*—a species of shalot—is recommended, both to be eaten and rubbed upon the temples. But, like sea-sickness and kindred maladies, there is probably no specific remedy, and all depends upon the individual and the circumstances of the moment. The actual effect, it appears to me, is largely due to diminished pressure upon the brain, for at these heights there is, of course, a pressure due to only half an atmosphere, more or less, and this is rendered more harmful by the cold —which latter, at least, can be guarded against. I have heard of cases where the brain has been so affected that the sufferer had desired to commit suicide. I have not exactly experienced such a desire, I must admit, but it has occurred suddenly to me, sometimes, on riding past some one of these peaceful blue lakes at these high elevations, that

life was hard and weary, and that the translucent waters looked exceedingly peaceful! Another noticeable effect of these high altitudes is the increased desire for sexual intercourse; and this is even found to be an antidote, in some cases, for *soroche*.

The Cholo Indians, born at these altitudes, are free from the effects of the thin air. It is remarkable how they run up the hills like goats, and how the miners work constantly at their hard labour of drilling, at these elevations. Imported labour cannot compete with them for this reason, and the European can only act as superintendent, and the Chinaman must remain nearer the coast regions. Nature has preserved these high regions, in this respect, for the true sons of the soil; those who, at least, have paid her the homage of being born there.

What are these vast plateaux for? What is their significance in the cosmos? Comparatively little vegetation flourishes there, and man can scarcely inhabit them. Of course, they are the primary cause of secondary useful conditions; as, for example, great watersheds, great natural manufacturies and storers of water, which is enjoyed by the lower regions, and this alone warrants their existence. For man can only ask the "use" of anything as regards its relations with himself, if I may be pardoned such a platitude. But, possibly, we may look further than hydrographic or climatic uses, valuable though they are. It must surely be that the future of science will reveal to us new and strange purposes of uses for high altitudes. It may be that great available differences of elevation shall afford some source of energy, some difference of potential, or other condition, unsuspected at present. It may be that the being able to reach up so far into the unexplored regions of the air shall afford us some supply of hitherto unknown waves, vibrations, light, dynamic energy, atmospheric products, which our evolving mechanical skill, and the researches of our tireless physicists, shall harness for man's uses. In my mind, there is no doubt of this. Time will show.

City of Huaraz and the Huascaran Peak.

CHAPTER XVI

ASCENTS OF SNOW-CAPPED SUMMITS AND PEAKS[1]

DURING my stay in Huaraz, I was asked by the authorities of the place to explore a pass upon the *Cordillera Blanca*, or eastern range of the Andes, which, as elsewhere described, bounds the valley of Huaylas on the east.

The object of this exploration was to determine the practicability of making a mule road from Huaraz to the towns on the other side of the Cordillera, eastward, such as Huantar and Huari, as also to open up a nearer route to the tropical Montaña, for this proposed road would shorten the distance to the latter place by several days' journey from Huaraz, and its construction was of decided importance to those communities.

No white man had ever crossed this *portachuelo*, as the snowy passes of the Peruvian Andes are termed, notwithstanding that various persons had set out from Huaraz or Huari at different times to undertake it; and indeed it had only been traversed by two or three Cholo Indians, who, under the stimulus of reward, had ventured across the ice-cap which covered it. The authorities were now desirous of taking advantage of the fact of an English engineer being among them, as they informed me, in order to have the pass examined, and I accepted the commission; not so much in a professional sense, but in a spirit of exploration and a desire to do something which might benefit the community, whose hospitality I had enjoyed a good deal. However, the municipality afterwards insisted on presenting a fee.

Accompanied by four young Peruvians of Huaraz, an

[1] Read before the Royal Geographical Society.

Indian guide, and eight Cholos, who carried the baggage and instruments, I set out on 3rd October (1903), and we ascended the canyon of Quillcay-huanca, down which flows the small river Quillcay, and formed camp at the foot of the glacier which gives birth to that river. The elevation of this point is 13,300 feet, the western edge of the perpetual snow-line.

Sleep was continually disturbed by the thundering of the avalanches, and towards morning a heavy rainfall began, succeeded later by snow. The temperature, however, was quite mild, and at nine o'clock the party, having ascended the rocky wall on the right-hand side of the canyon, previously crossing the lateral moraines and *débris* deposited by the glacier, entered upon the snow-cap.

Here all secured themselves to the rope which had been brought for the purpose, for numerous crevasses in the ice-cap were encountered, in many cases invisible from the light covering of freshly-fallen snow which concealed them. The ascent was gradual, rising gently towards the summit; but before this was gained the snow was falling thickly, and in a few minutes entirely obscured the view. In the face of this the party was brought to a standstill, for, in the obscurity, a false step might have precipitated one or all into a crevasse.

After the lapse of an hour, the storm showing little signs of abating, and the Cholos complaining that their feet were freezing — for they wore neither boots nor sandals, but marched with bare feet—it was decided to make a move, cautiously. But the guide, an Indian who had only once made the passage, and in fairer weather, had now become confused, and, after vacillating for some minutes, desired to set out in a direction which was very nearly that by which the party had arrived, or the reverse of which it was necessary to follow, trying to influence the Cholos to follow this course.

But I had previously taken an approximate bearing, and in view of this was obliged to take a firm stand, and to threaten with dire penalties any further insistence:

Glacier at head of Quilcay Valley, near Huaraz.

and ostentatiously display the Colt's revolver which I carried; for the route the guide desired to take led to a sheer descent of some hundreds of metres. At this moment the sky cleared slightly, and a landmark—a high peak—was recognised, when the course was followed in the direction indicated by my compass. The track behind was spotted with blood, which came from the bare feet of the Indians—who, however, accustomed to hardships, scarcely complained, but staggered on under their burdens, sustaining their energies with the coca leaves which they carry with them, and continually masticate.

In a short space the summit was reached, and a view obtained of the eastern slope of the Cordillera. Here I fired three shots: the signal agreed upon with the party who should have ascended from that side to meet us.

All waited, and scanned the white landscape eagerly, but in vain; there was no answering shot or shout. I was not altogether unprepared for this, for a good many years' experience in Spanish America shows that one of the qualities of the Spanish American is "failure to make connections," and to depend upon the efforts of the natives is often to lean upon a broken reed. This, of course, apart from the many good and useful qualities which they possess.

In front of us stretched downward long slopes and sheer descents, the former crossed by yawning crevasses of unknown depth, among which there appeared to be no passage. Beneath our feet the snow, heavily fallen during the night upon that side of the mountains, lay to such a depth that at every step we were buried to the waist; and fear, amounting almost to panic, lest a crevasse filled with the soft material should swallow them up, possessed itself of some members of the party. Above our heads the sun, which for a few brief moments had appeared, again became obscured by the falling snow, which threatened to again blot out the landscape and leave us halting upon that debatable ground. The guide, moreover, had lost confidence in himself, and feared to take a single step in advance.

"*Vamos a' regresar*" ("Let us go back"), was the cry of my companions; and even the stolid Cholos echoed the suggestion among themselves—not in Spanish, but in their native Quechua. To this, however, I opposed a firm negative. It was not that professional pride was aroused, nor that the character of intrepidity of the whole British nation, as represented by my unworthy self, was at stake; nor that bets had been freely placed by friends in Huaraz that the *inglés* would accomplish the passage; but simply a desire to fulfil what had been begun, believing it perfectly feasible with calmness and caution.

Moreover, I thought I discovered a possible path among the crevasses, and across a natural bridge of ice and snow which spanned an abyss. So, seeing that the guide would not advance, and that further hesitation would lead, perhaps, to mutiny, I proposed that my companions should hold firm to one end of the rope, whilst I alone, tied to the other end, should explore the way in advance, in short stretches.

To this, however, they demurred, fearing for my safety; and at last, impatient of the delay, and seeing that every minute added to the obscurity due to the thickly-fallen snow, I took the guide's place, and, animating the others, we slowly commenced the descent, sinking waist-deep at every step in the snow.

After advancing some short distance, the guide, beginning to recognise the ground, again took the lead, and, fastened to a rope with one of my companions, explored the way in advance.

Slow, laborious, and exceedingly fatiguing was the descent. The utmost caution was necessary in order to avoid the crevasses, which in many cases were covered with a light cap of snow, incapable of sustaining the weight of a man. In spite of all our caution some narrow escapes were experienced, for one of the young Peruvians fell suddenly into a crevasse. Fortunately, the rope in a measure sustained him, as well as the support he was able to obtain with his elbows in the walls of the opening,

for, although deep, the crevasses were generally of small width; and he was promptly released from the dangerous situation.

Shortly afterwards, in descending a slope, I felt that the ground beneath my feet was giving way. It was another crevasse, the "bridge" over which had broken through. I obtained a momentary glimpse of blue walls below, which extended downwards until lost in obscurity; but with the quickness of thought I threw myself backwards at full length upon the snow, and slowly retreated, making signs to those who followed me to do likewise. The remnants of the "bridge" slowly slid into the abyss, and we sought another way whereby to avoid the spot.

So fatiguing was the advance, due to the depth of soft snow, that it was necessary to pause at every few steps, and it seemed as if night would overtake us in that perilous spot. It was then that I remembered my experiences in "tobogganing," both in England and in Canada; and, taking the large, stiff underpart of leather, which Peruvian saddles have, from the Cholo who carried it, I rolled up the front edge to form a sort of sledge, and, sitting on it, tobogganed down the slope with comparative ease. The Cholos and my companions followed suit with any other articles, including their blankets, which lent themselves to the purpose, and in that manner we descended for some distance.

The afternoon sun again appeared, and calling a halt, I had some photographs taken — for we carried two cameras—both of the people and of the snow-covered slopes. It was just before this that the blue spectacles I wore — for these are necessary to avoid snow-blindness—had become broken, and had to be discarded; and, although I felt no inconvenience during the journey from the reflection from the snow, nevertheless on the following day I was almost blind from the consequent swelling and inflammation of the eyes. As for the guide, who had neglected to provide himself with spectacles—he was almost totally blind for several days afterwards.

Wet, cold, and hungry, our privations were further

added to by the carelessness of one of the Cholos, who carried the basket of provisions and the bundle of cooking utensils; for, on descending a slope, I was horrified at seeing these articles roll past me! The Cholo behind had loosened his hold of them, and away they went. I made a wild grab at the tea-kettle as it passed, but missed it, and, together with the provisions, it disappeared into a crevasse.

Fortunately, none of the party suffered from the dreaded *soroche*, or mountain fever, which generally attacks persons accustomed to lower altitudes. This, as is well known, takes the form of violent headaches accompanied by vomiting; and I, having experienced a severe attack in the Andes at less altitude, had taken some precautions against it, and which proved efficacious. Included in these was the eating, from time to time, some of the raw, brown sugar which the Cholos carried in cakes, and pressed upon me.

After some six or more hours of floundering, tobogganing, and struggling, the party reached the eastern edge of the perpetual snow-line, and regained again the solid rock. From this point the descent was easier, and at 7 P.M. we arrived in the valley below, and which, with the river which flows down it, bears the name of *Pamparajo*.

Here the night was passed in one of a series of caves which exist there, and such refreshment was partaken of as could be procured. I found the infusion of the leaves of the coca, taken as tea, agreeable and sustaining; and a native remedy, consisting of a starchy, tuberous root, applied to the eyes, speedily cured the effects of snow-blindness.

The principal point of geographical interest of the region, apart from the route, as a means of communication, as before described, is that the summit passed is the *divortia aquarum* of the Continent. The waters of the river Quillcay, where the ascent was made, flow to the Pacific Ocean; those of the *Pamparajo*, where the descent was accomplished, flow to the Atlantic. The

Head of a Valley: Cordillera Blanca.

former by the river Santa, which flows along the valley of Huaylas and debouches into the Pacific at the port of Chimbote, a trajectory of only some 50 leagues; whilst the latter, the *Pamparajo*, *via* the Marañon, flows through that vast and comparatively little-known territory of the interior of Peru—the Montaña—and through the Amazon and Brazil, to where the latter mighty river empties into the Atlantic.

As stated, the greatest altitude gained was approximately 16,100 feet, or considerably more than that of the summit of Mont Blanc. The extension of the ice-cap was somewhat more than a league in width. The rock-formation of the lower slopes of the route passed over is of a hard porphyry capped higher up, and probably beneath the snow, with a slate, fast disintegrating under the action of the elements.

I have spoken of the infusion of the coca leaf, as having been beneficial in warding off the effects of cold and fatigue; and whilst it is a fact that cocaine is an injurious drug when taken in excess, nevertheless, like some others, it is stomachic, and useful in certain circumstances, such as described, and its use might reasonably be extended.

The dried coca leaves are the Indians' best friend. Provided with a pouch full, and the little gourd of lime which he carries, the Cholo can abstain from food for days together, when on a march. A certain stimulant, or reaction, takes place in the stomach after masticating the leaves and lime, but its too constant use has a deadening or stupefying effect on the Cholo, undoubtedly because he takes it to excess. The dried coca leaves are one of the principal articles of commerce among these people, and at times even takes the place of current coin.

Somewhat to the north of the snowy pass which I traversed is the peak of Huascaran, of which I attempted an ascent, as described below.

There are many high peaks in the Peruvian Andes, which have never been ascended; many whose height

is not known; and others whose names are even unrecorded.

The peak of Aconcagua in Chile is probably the highest point in the Andes, as, indeed, in the whole of the Americas, North, Central, or South. Its height is 23,080 feet; but the Sorata, near Lake Titicaca, upon the Bolivian side, is by some authorities stated to be 23,600 feet high, and in this case would be the foremost. Other writers, however, give it as slightly over 23,000 feet.

Next in order comes the Huascaran,[1] given by triangulation as 22,180 feet — probably the third or fourth highest peak in the New World, and whose ascent I attempted to make, gaining a point which no human foot has ever yet reached. This peak is in the Eastern Cordillera, or "Cordillera Blanca," of the Peruvian Andes, in the Department of Ancachs; and in fine weather, at a sufficient distance from the coast, its summit can be seen from the Pacific Ocean.

My ascent was made in May 1904, and the account was read before the Royal Geographical Society by the then President, Sir Clements Markham, on my behalf. I do not think this peak is mentioned in any existing work on geography, and indeed it is but little known.

This splendid granite uplift, with its gleaming mantle of perpetual snow, always fired my imagination as I beheld it from Huaraz, during several months' stay there. Seen from that city, it reflects the colours of the morning and evening sun with indescribable beauty, and towers upwards from among its sister members of the chain towards the blue heavens in impenetrable majesty, silent, solitary, eternal. Impenetrable, because no human foot has, so far, ever pressed its summit. Raimondi attempted it, but failed, and only established its height by triangulation—6,721 metres above sea-level. I had often desired to make the ascent, in spite of the reiterated assertion of the inhabitants of the valley that it was absolutely impossible.

But I have long since found out that the "absolutely

[1] Also Coropuna, 22,900 feet.

VALLEY OF HUAYLAS: TOWN OF YUNGAY, AND THE HUASCARAN PEAK.

impossible"—especially in Spanish America—is only another term for the absolutely untried, and shortly the opportunity presented itself. Some Peruvian friends of Yungay, a pretty and industrious little town in the valley of Huaylas, not far from the peak, took me to examine some gold mines, which proved to be upon the very base of the mountain; and I resolved, at least, to make a reconnaissance of the possibility of ascending.

I sent back, therefore, to Yungay for blankets, hatchets, provisions, blue spectacles, rope, etc. Guides there were none, as no one had ever ascended much beyond the snow-line.

On the following day, 5th May, 1904, at 6 A.M. I began the ascent, accompanied by a Peruvian friend of Yungay, an Italian from the mines, and five Cholos. The sky was clear. The way at first lay up easy slopes and ravines, and through thickets of flowering shrubs and of light timber—quenua and quishua; often with a carpeting of a hard-wooded, blue lupinus. At 11,500 feet altitude the Italian became fatigued, and returned to the mines, the rest of the party continuing upwards. The slopes of the mountain, below the snow-line, were now very steep, and covered with great blocks of granite, which made walking very fatiguing. Besides, the rarefaction of the air made breathing difficult, and my companion, the Peruvian, fell behind somewhat, but nevertheless continued manfully upwards. We were obliged to stop every twenty or thirty steps to recover breath, and the distance which separated us from the base of the ice-cap, which we beheld above us, diminished by very slow degrees. A damp mist now appeared and enveloped us, blotting out the view.

Fortunately, this mist disappeared shortly with the heat of the sun, and at 11 A.M. we reached the snow-line, at an altitude of 14,500 feet. Here we called a halt for breakfast, making coffee with a fire of dried grass pulled from between the rocks just below the snow-line. I expected to have suffered from *soroche*, but was pleased to find myself free from this troublesome effect of high elevation, and attributed it to having lived for some months at

the altitude of Huaraz, so becoming somewhat accustomed to the thinner atmosphere. Also the *chancaca*, which we carried and ate occasionally, seemed to stave it off. This is nothing but small cakes of crude brown sugar, which is made in those regions, and which the natives know from experience to be beneficial. I have noted the effect of this in other similar situations, and the sugar, undoubtedly, has some virtue for mountaineers.

After breakfasting we continued upwards, but my companion could not advance over the snow; his feet slipped back at every step, and even the Cholos walked with difficulty. The snow at first was soft below, covered with a thin, hard crust sufficiently strong to bear the weight of a man, advancing with care. For my part, I found I could ascend with considerable ease, so that I soon left the rest of the party behind, and found myself alone, treading those virgin dazzling slopes where human foot had never trod until that moment.

The Peruvian remained below with one of the Cholos, and I continued upward with the other four. We passed various *grietas*, or crevasses, and arrived at a small saddle-back from which an outcrop of rocks protruded through the ice-cap. At this place one of the Cholos broke through the snow-crust and became buried to the arm-pits; and, although there was little danger, the occurrence inspired such fear in the timid souls of the others that they declined to go on. The aspect of the glaciers beyond was, it is true, awe-inspiring. Frightful precipices opened to the view, showing where avalanches had fallen; and even as I watched an avalanche fell—a wave of snow whose resounding roar wound grimly among those high terraces and far façades, and possibly caused the people in the valley towns below to look upward.

My first intention had been only to pass the snow-line, but the desire to attempt the summit had been taking possession of me as I ascended. The tonic air invigorated the body; the glorious panorama inspired the mind; and I felt capable of reaching the crest of one of those beautiful twin peaks of the Huascaran which towered above.

The cowardice of the Cholos inspired me with anger and disgust, and in vain I offered them reward; they would not leave the point of rocks where they had taken refuge. At length I left them, and went on alone.

At 16,500 feet I stopped. Before me was a deep and narrow crevasse, which it seemed imprudent to cross alone. I long stood on the verge, for the desire to go on was very strong. At the other side, still far away, the twin peaks gleamed like purest porcelain in the rays of the afternoon sun. Blue and pearly shadows shaded gently off upon their flanks, losing themselves in grim profundities, where, far below, the foamy blanket of the avalanche now lay; the mist of its pulverisation still hanging like a faint white curtain near the base. Nearly 6,000 feet above me the northernmost peak stood out, piercing the blue heavens like the gnomon of a mighty dial, along whose sloping side I could ascend. I was alone in the midst of that awful yet beautiful solitude: alone with Nature upon the highest points of matter—the roof of the world!

But an unstable matter, for at my right hand were millions of tons of ice and snow, so insecurely poised upon the abrupt steeps that a breath, it seemed, might hurl them down upon me, and which, even as I watched, seemed almost to be in movement. Also, the broad ice-field over which my gaze wandered, and which intervened between me and the base of the "gnomon," was crossed by faint blue lines—the surface edges of innumerable chasms and crevasses. Should I go on alone?

Yes. I passed the crevasse, and continued onward over the ice-cap, slipping at times, and stopping to recover breath from the thin air, and to observe the panorama below. Again I was brought to a halt by an abyss wider and deeper than before, whilst near at hand and all around were others. The ice-cap was folded, rigid and cracked; a false step might send me down a thousand feet or more: was it wise to proceed alone?

The majesty of that vast solitude fascinated me: I was glad to be alone where no human foot had ever trod. Far below and far away, north and south, extended

the valley of Huaylas, threaded by the river Santa, the villages upon its banks scarcely distinguishable through the shimmering mists; whilst to the west the clouds which hung upon the "Black Cordillera" shut out the vast horizon of the Pacific Ocean. But not a cloud rested on the twin peaks of Huascaran, as their "porcelain" slopes pierced the cerulean vault above me. Upon their sides, near the noble crests, enormous banks of ice—vast, unsupported snow-cornices—stood out, overhanging the abyss below in fearful equilibrium, and casting sharp, violet shadows upon the white façades from which they projected. Again it looked as if a breath might hurl them downwards—as indeed they had been hurled before—and again I seem to see them move. Suppose they fell—why not now, as at any other moment in time and space? I seemed to watch, fascinated, the breaking away—I could imagine exactly what it would be like. A thunderous roar: an engulfing wave of snow and ice whose appalling crest would sweep the tableland between us, more terrible than an ocean billow.

Again I hesitated, still drawn onward, and again I examined the crevasse. Part of the tuft of snow whereon I stood, upon the verge, crunched and gave way, falling down, down, down. Was it a warning? To continue onward might be death. Yet what a resting-place and grave-stone for a wearied mortal! By day rearing its splendour on high, this gnomon peak; by night ever cutting its silent arc against the purple dome of the starry firmament—a launching point in space whence a last human thought might wing its way, leaving its material temple to eternal preservation in the matter it strove to overcome.

I turned away regretfully, and followed my own foot-prints—the only ones which had ever been made there by man—downwards again, passed the crevasse, crossed the tableland, and shortly arrived at the place where the Cholos anxiously awaited my return. There I made them build a cairn of loose granite blocks; it was with a species of satisfaction that I saw them groan and

THE HUASCARAN PEAK: A SNAPSHOT: SOROCHE-STRICKEN MULES.

sweat—a punishment for having failed to accompany me, so preventing the probability of arriving at the summit.

Within the cairn I enclosed a bottle containing my name, the date and the altitude at which I had arrived—16,500 feet. Then we descended to the lower edge of the snow-line where my Peruvian companion was still awaiting me, and we made and took some tea, which was very acceptable.

I found it relatively easy to descend over the ice-cap, by the method of sliding in an erect position, down the slopes, digging my heels and staff into the snow when I began to attain too great a velocity. The Cholos seeing me perform this, were much amused, and bursting into laughter endeavoured to imitate the method, but generally fell over in the attempt, or lost their sandals in the snow.

We arrived later at the mine again, and the following day I returned to Yungay, where news of the attempted ascent had preceded us, people turning out to observe the Englishman who had undertaken such a dangerous and —to their way of thinking—useless adventure. "Only an *inglés* would have done it," was their comment.

I consider that the ascent of the Huascaran could be made without great difficulty, with proper companions and appliances. I felt a species of regret as I looked back at the virgin slopes above where I had ascended; that regret which he might feel who has loved, whose love has been reciprocated, but who had been separated by the iron hand of circumstance from the beloved object before the consummation of his affections!

There is a series of other beautiful and lofty snow-clad peaks in the continuation of the "Cordillera Blanca," to the north. Some of these, whose heights were attained by triangulation, do not fall very greatly below that of the Huascaran. The latter name was given to the peak by Raimondi. The name by which the Indians know it is Mataraju or Matarao, which is a Quechua word meaning the "Twin snow peaks," or "Snow forehead."

CHAPTER XVII

MINERAL WEALTH

MOST of the Republics of Spanish America have been endowed by Nature with abundant wealth in metalliferous and non-metalliferous minerals. Peru is remarkably situated in this respect, and enjoys so diversified a range of minerals within her soil that their enumeration almost exhausts the list of ores known to commerce and science.

The mineral-bearing regions cover a zone of 1,000 miles in length by 200 to 300 in width, embracing both the eastern and western slopes, and the summit, of the Cordillera : the whole of the region, in short, which comes within the direct influence of the Andes. The rocks are, speaking generally, of the Jurassic and Cretaceous age.

The mineral-bearing formations may be roughly divided into, (1) lodes or veins, and (2) deposits. Among the former I have examined numerous lodes of gold, silver, copper, lead, zinc, iron, quicksilver, wolfram, molybdenite, and all others, excepting tin. Among the latter—gold, silver, copper, quicksilver, coal, salt, nitrate, borax, etc.

Many of the gold and silver mines were worked in the remote past — even in the most remote places—by the Indians before or during the Inca *régime*; and the Spaniards followed after with more ambitious enterprises. In my expeditions I have often penetrated into the bowels of some ancient mine, abandoned for centuries, inhabited only by bats, and—according to the superstitions of my guides—by the spirits, generally evil, which guarded these old scenes of man's sweat and avarice. I have seen no spirits, but imagination might easily conjure up the forms of toiling Indians, doomed by hard task-masters to labour

to their end, unpaid and ill-fed. Well might their groaning flesh have left some protesting phantom, which should haunt these abandoned galleries, until some final day when they should bear witness against those who destroyed them!

For the Spaniards took little heed of Indian life. For them the Indians were but instruments by which a certain amount of gold or silver ore could be extracted from its abiding-place, and the flow of noble metals which poured into the coffers of that once-powerful Empire of Iberia called a heavy toll upon the Indian population of South America. The decimation which was caused in Peru by the Spaniards has been spoken of in terms of millions; but whatever may be its real amount, the fact remains that Pizarro found a country whose population exceeded many times its present number, and that the slavery employed in the mines by the Viceroys and others, was greatly responsible for its rapid reduction.

The history of the yellow metal in Peru is largely the history of the country itself. There is no doubt that the Incas possessed enormous quantities of gold. It is not, however, to be supposed that gold existed in nature then in a condition which rendered its winning any less difficult than at present. The secret of the great mining operations of both the Incas and the Spaniards was in "cheap mining labour"; that is to say, in co-operation on a large scale among the Incas, and in slavery and sacrifice of Indian life by the Spaniards. I have examined many mines in the interior of Peru, which have been worked on a large scale, including gold-bearing gravel deposits, where the excavation which has been carried out in centuries past is considerable. The material of these deposits did not necessarily carry a high proportion of gold, but it was abundant, and large quantities were handled by means of huge "grants" of Indians — who received little or no pay—and produced important supplies of gold.

In the south of Peru there is an auriferous region which is probably one of the most important in the world, and it

is remarkable that it is so little known elsewhere. This is the famous region of Sandia and Carabaya; provinces of the Department of Puno, and which I have spoken of elsewhere. The remarkable feature of this region is its geological and topographical formation, and the considerable elevation at which portions of it are situated —spanning the main range of the Andes — 15,000 to 17,000 feet altitude above sea-level. Here are great deposits of gold-bearing material in the form of huge banks, miles in extent. These are, perhaps, glacial deposits—moraines; and in some instances they form escarpments whose upper extremities are contiguous to, or rather are thrown off from, the very summits of the perpetual snow-capped range. One of these enormous banks, more than 2 leagues in length, has been worked at one end from time immemorial, and at present the material is being treated by hydraulic methods with "monitors." A theoretical calculation has been made of the gold contained in this moraine—if such it be—which results in a sum greater than the total value which has come out of California since the discovery of that country. This is the great Bank of Poto.

There is a series of these remarkable banks, and lower down, and forming the plains at the immediate base of the snow-capped peaks of the Andes, are extensive plains, or *pampas*, whose material is a gold-bearing soil. Certain areas might be susceptible to profitable working by means of dredging, or other well-known methods. These plains are at an elevation of about 15,000 to 16,000 feet, and the climate is not excessively rigorous, except at certain seasons. I have slept in the open air on several occasions in this neighbourhood, even at a higher elevation, and have experienced little inconvenience from the cold.

These auriferous earths, at any rate in some cases, are of glacial formation. The stones they contain do not generally show the effect of attrition, such as in the deposits of water-worn gravel which occur at a much lower elevation in the same district, but are generally

angular, and rests in a position which shows that they have been deposited in quiet waters, and have not travelled far from their place of origin to their final resting-place. The mass of the material is a marly and ashen-hued earth; the stones or fragments of rock are of slate and quartz, the same material as the mountains upon which they rest. All along these extensive gold-bearing *pampas* are strewn blocks, generally small, of white quartz, which are very noticeable, as they are washed clean by the frequent rains, and shine out from the grey soil of the plains.

Alternative to the supposition of the glacial formation of these enormous auriferous deposits in this region, is the assumption that they are the result of action caused by the bursting of enormous lakes, which had this sedimentary gold-bearing material below their waters. And this action has undoubtedly taken place in some cases, as the topographical conditions show. The waters of these former lakes seem to have forced a violent passage to the lower levels, destroying the rocks and carrying down the *débris*. The effect of such huge bodies of water, released from considerable heights, and descending the slopes of the Andes, can be partly imagined; and the vast quantities of material which have been moved, and its general disposition, bears out this idea in a striking way.

As to the lakes, many exist still, and nothing more attracts the attention of the traveller and engineer than the existence of these huge bodies of water, actually astride the summit of a mountain range at an altitude above sea-level of 15,000 to 17,000 feet. For example, Lake Aricoma, upon whose shores a heavy snow-storm overtook me at nightfall, and where I was obliged to sleep without shelter, is at 15,000 feet. It is 2 to 3 leagues in length, more than a mile in width, and, judging by the violets and greens of its tranquil waters, must be of great depth. I have described this lake elsewhere.

The eastern flanks of the Andes descend rapidly; and within one day's journey the traveller has descended from

these high places to the more sheltered valleys below, almost at the beginning of the forest regions, and at an elevation of 10,000 or 12,000 feet. Penetrating still further, the traveller arrives at that remarkable system of gold-bearing rivers and streams, still in the same Province, which forms the head-waters of the Madre de Dios river.

Here are some enormous deposits of auriferous gravel—old river-beds, or lake-bottoms—which have been upheaved to their present position by subsequent geological movement. One of such deposits—Aporoma—which I visited, has been the scene of extensive work during, as well as before, the Spanish *régime*, and is described in a former chapter.

Where did the Incas obtain their great wealth of gold? There is no doubt that they worked these huge auriferous alluvial deposits, and that they partly formed the source of their treasures. The Spaniards on their arrival appear to have immediately taken note of these gold mines, for one of the Pizarros took possession of one of the richest, and worked it on a large scale immediately after the conquest of Peru.

There, then, are these vast mines, generally in entire abandonment. They have yielded up much gold for generations past. They have been the scene of bloodshed, cruelty, and avarice in forgotten years of long ago, and there they lie, inviting modern enterprise, modern fraud, and modern avarice. The filibusters of the past may be succeeded by the "buccaneers" of to-day, and the London or New York promoters and stock exchange gamblers may now take precedence!

On some of these rich gold-bearing streams the Indians work for the extraction of gold, employing the methods which they themselves have developed. In some places they have constructed what they term "gold farms," where they literally "harvest" their annual crop of gold. This consists in the paving of suitable river-bars with large stones set edgeways, forming a "floor," the stones and the interstices between them acting as "riffles."

When the river rises in flood, it carries down the gold-dust within its waters, and deposits it upon the prepared area. When the dry weather causes the volume of the flood to decrease, the "farm" is again laid bare, the stones are removed, the rich gravel deposited between them collected and washed, whence gold in nuggets and dust in large quantities is extracted. The stones are again placed in order, and the "farm" is ready for another "harvest." On the higher *pampas*, of which I have previously spoken, a different method is employed. An open conduit or ditch is run from some small stream, as nearly horizontal as possible, in order to gain altitude above the stream-bed, or *ganancia*, as the Spanish term has it. From this conduit small sluices are conducted, terminating in the stream-bed; and into these, which are paved with stone, the earth or gravel is thrown. The water is admitted into the conduit, and rushes violently down the sluices, washing away the soil and leaving a gold-bearing residue of sand, which is collected, and the gold washed out in *bateas* or pans.

In examining these regions I have employed the Indian miners at times, and they are very expert with the *batea*. Diligently and patiently they wash out pan after pan of soil, as I stand over them.

"*Ori Cancha?*" I ask them, perhaps, as the material disappears, which in their language of Quechua is, "Is there gold?" "*Manam Cancha*," they sometimes reply, which being interpreted means, "There is no gold." But generally they hand me the *batea*, with several bright, yellow particles reposing among the black sand at the bottom. In the former instance, if the undesirable negative recurs too much, the following operation is necessary, in order to appease some unamiable spirit which is supposed to be hovering nigh, and which has exerted its influence to prevent the gold appearing. The Indian takes a mouthful of native brandy from my bottle—which I generally carry for "emergencies"—and blows a portion of the alcohol to the north, the south, the east, and the west. A small portion is poured into the

pan, and also—superfluous to add—down his own throat. This being performed, all the warring elements are appeased; the washing continues, generally with satisfactory results. I have observed that this invisible agency requires appeasing several times during the day, and with marked regularity, but I have not generally considered it necessary to enquire too closely into its methods.

The region above described is traversed by innumerable lodes of gold-bearing quartz, but, with few exceptions, these are unknown and unworked. The formation of the country is, as stated, slate with quartz. Some of the lodes are phenomenally rich in gold, one in particular having been a by-word in the country. This was being worked by an American company, and the gold was sent to the Lima mint. A shipment of the gold in bars passed me on the road, of three hundredweight, which was stated to be only a fortnightly remittance, and the result of the working of ten stamps. It speaks well for the conditions of the country that the only escort with this treasure was a solitary individual with a carbine. The mine is in a region covered with vegetation, and was discovered by accident, due to a landslip. These very rich lodes, however, are not of great extension or permanence.

The gold, therefore, in this part of Peru exists under diverse conditions. There are the great banks before described, with a value in gold of perhaps twenty or thirty cents, upwards, per cubic yard, and which is recoverable by the "hydraulic" system with "monitors." There are the level plains or *pampas* of auriferous soil which are probably susceptible to gold recovery by means of dredges. There are the river-beds and bars, where the gold may be recovered in some places by dredging, in others by washing in sluice boxes, and lastly, the veins and lodes which call for the use of machinery adapted thereto.

Other famous regions where auriferous gravels are encountered are the districts of Pataz, and the river Marañon. This latter has been described in the chapter dealing with my expedition thereto. The Indians of

the Marañon wash out gold-dust and nuggets from the river-bed at certain seasons when the water is low. They were not acquainted with the use of quicksilver for this purpose, apparently, before I showed them how to employ it.

The regions of gold-bearing alluvial deposits are entirely on the summit or eastern slope of the Andes. None of the rivers flowing into the Pacific carry gold, except in one exception of the Chuquicara river, joining the river Santa, which breaks through the western Cordillera at the termination of the valley of Huaylas. Not so, however, with the quartz lode-bearing formations which occur in almost every part of the country. Some of the better-known gold-bearing regions, including those already described, may be briefly enumerated. On the western side of the Andes are those of Salpo, Otuzco, Huaylas, Yungay, Ocros, Chorillos, Cañete, Ica, Nazca, Andaray, Arequipa, etc., and on the summit, tablelands and eastern slope, and Montaña; Pataz, the Upper Marañon, Huanuco, Quinua, Huancavelica, Cuzco, Cotatambas, Aymaraes, Paucartambo, Quispicanchi, Marcapata, Santo Domingo, Poto, Aporoma, etc., in Sandia and Carabaya; and a host of others throughout the vast zone already spoken of.

Comparatively few of these regions contain mines in work at the present. The total output of gold in 1901 was only about £250,000, and fell in 1904 to £80,000. The total amount of gold coined at the Lima mint in the years 1898—when the coinage of silver was suspended—up to and including the first half of 1905, was £556,480. It is seen, therefore, that at present the industry of gold mining is but little developed; not due to lack of the prime material, but to other causes. The auriferous quartz lodes are generally found in the granite and dioritic rocks.

In the history of gold in Peru mention may not be omitted of the Inca treasures, and the *rescate* or ransom of the ill-fated Atahualpa, and I am tempted to translate from the Peruvian writer, Zapata (see page 212), although

his information is largely gathered from sources which have been employed by other historians. He says:

"Atahualpa was not Emperor of Peru, but a tyrant of this Empire. According to the laws of the kingdom he was a bastard son of the great Huayna-Capac. In possession of the kingdom of Quito when the latter died, and not content therewith, he aspired to the whole Empire.

"To accomplish this Atahualpa sent numerous troops to Cuzco, the capital of Peru and Inca Court, against Huascar, his brother. Thirty thousand men were slain on both sides, and both monarchs were made prisoners by their respective enemies. Atahualpa escaped, and caused forty-three of his brothers to be beheaded, and Huascar—the real Emperor—was thrown into prison."

It should be here observed that most Spanish historians endeavour to paint Atahualpa in dark colours: possibly to excuse the crime of their countrymen in betraying him.

"In this condition was Peru when the Spaniards arrived in the country for the second time—their first visit had been to Tumbez in 1525. Pizarro marched to Cajamarca, by request of Atahualpa, and sent Hernando Soto as emissary, who was received by the Inca with presents of gold and silver, and told to inform Pizarro that he would see him on the following day, when he must give him the reason for his arrival in that country.

"Pizarro disposed 300 men behind the walls bounding the plaza, and these were encamped when the Inca entered, accompanied by his followers and grandees, borne in palanquins of gold on Indians' shoulders. Pizarro was presented, and asked by the Inca the reason of his visit to such remote regions. Reply was made by Vicente Valverde, the friar, by means of the interpreter, Felipe Huallpa, to the effect that the High Pontifice and the Emperor had sent his Chief to announce to them the true faith of Jesus Christ, and that as they—the Spaniards—were emissaries of these two supreme heads of the world, tribute must be paid them. The Inca replied that he could be tributary to no other monarch; payment of homage would be foreign to his sovereignty. Even less could he adore the god they announced, or recognise their Pontifice.

"Fray Vicente Valverde, desiring to persuade him upon the last matter, the Inca requested some testimony as to the truth of what he affirmed, and Valverde put into his hand an open breviary. Thinking that the book might satisfy him, the Inca spoke to it, turning the leaves meanwhile; but, seeing no reply forthcoming, he threw it from him with a mocking gesture.

"'Christians! The Evangelist trampled upon!' cried out Valverde at the instant,"

and this seems to have been the signal for a massacre, for Zapata goes on to describe how the Spaniards fell furiously upon the Indians, killing five thousand, and taking Atahualpa prisoner.

Then came the offer of the famous *rescate*, or ransom; and it is recorded that Atahualpa, reaching up at arm's length against the walls of the room where he was imprisoned, offered to fill it to that height with gold if he were released, and, in addition, to fill the whole house with silver. The room was stated to be 22 by 27 feet, and, supposing the line marked to have been 6 feet high, the value of the cubical contents[1] of the apartment, taking the modern price of gold, might be calculated at one hundred million sterling. This would be about equivalent to four years' production of the Transvaal mines, taking their present annual output of twenty-five million pounds.

There seems to be no doubt that the offer could have been fulfilled as far as the existence of gold in the possession of the people was concerned, but, impatient of delay, the Spaniards killed Atahualpa and burned his body, on the 3rd May, 1532. Their excuse for this barbarous act was that the Inca had caused his brother Huascar to be secretly assassinated, and that the emissaries he had sent out to bring in the gold had charged the Indians to come to his succour. The actual amount collected was equal to a value of about three and a half million pounds, says the historian, Garcilaso.

Zapata, like all other writers on the subject, gives details of the vast treasures of gold possessed by the

[1] Made up of objects and utensils of gold.

Incas, in the form of vessels and utensils. Statues of the previous Incas, adornments of temples, such as the solid sheets and plates of gold covering the walls of these at Cuzco and Pachacamac; gardens full of artificial flowers, etc., formed of gold; the figures of animals in the same metal. He also speaks of the great amount of treasure in gold that was obtained by the early *Conquistadores* in Cuzco and other places, as well as the vast quantities which are supposed to be still hidden or buried in different parts of the country, especially in the neighbourhood of Cuzco, Cajamarca, and Pachacamac. He quotes from Garcilaso as follows:

"If all the treasure buried in Peru were discovered it would be impossible to enumerate its value; so powerful a sum is it that all that the Spaniards have obtained is in comparison but little."

He also speaks of the treasure hidden in Lake Orcos, near Cuzco, and says:

"It is stated that the Indians threw therein the great chain of gold that Huayna Capac had made in celebration of the birth of his son, to whom he gave the name of *Huascar*, which word means rope or chain. This chain, according to Solorzano, could scarcely be carried by two hundred Indians, and was 233 yards long, and of corresponding thickness."

Whatever may be the truth of all these accounts, it is certain that the Incas wrought in gold with much ingenuity and delicacy. I have seen gold objects which have been dug up from the *huacas*—tombs or temples—some of very fine workmanship.

It is to be observed that among the old inhabitants of Peru gold was much associated with religious thought and worship, as indeed it has been with peoples of earlier semi-civilisation generally throughout the world. During my stay in the city of Huaraz some religious objects were discovered not far away, in a subterranean temple, upon an altar of curious conical form, having beneath it a chamber for acoustic purposes, and which latter I

examined. The objects, of which I was given a photograph, which is shown elsewhere, consisted principally of discs of gold, silver and copper, tied together with a ribbon of gold, strong and flexible; shells formed of delicate leaves of gold; two figures representing some animal, and two sea-shells. The occurrence of the three metals mentioned, and which, I was informed, always appear among Inca traditions in the neighbourhood, has a special signification. The belief was that in ages past there fell from heaven an egg of copper, from which the first Indians sprang; after a time a second egg, of silver, fell, from which issued the nobility; and that after a long lapse of time a third egg of gold fell, from which came forth the Inca. The god they adored in that region was the well-known deity Viracocha or Huiracocha, and the sea-shells had probably some bearing upon the matter.

Zapata writes lengthily of the Temple of Pachacamac, near Lima, which was one of the principal centres of religion of the former people. To-day it is a heap of ruins, for, unlike the temples of the interior, it was constructed only of adobe bricks, which have not been able to resist the ravages of time. He says:

"The Indians profusely used the purest gold in their offerings in this temple. . . . The Spaniards took 27 loads of gold from this place, but were unable to obtain some 400 other loads of gold and silver, which, according to tradition, is hidden, buried in the sandy plain near at hand.

"The temple was dedicated to Pachacamac, which means 'the Spirit of the Universe.' In its dedication, Cuyus-Mancu, who was the Chief of the valley, denied the omnipotence of the Sun—the belief in which was held by the other Indians. There is no doubt that this prince was the first in America to worship the true God, constructing a temple in his dominions; and, although it is pretended that the Incas adored Pachacamac, they had no notice of him until Tupac-Yupanqui, Inca XI. of Peru, carrying his conquests to that region, entered Pachacamac, and, hearing that it was the 'Unknown God' that those people adored, respected his sacred name.

"Cuyus-Mancu gathered together the philosophers and

priests," continued Zapata, "and set forth as a law touching this deity who must be adored, the following clauses: 'He (the Sun) cannot be an universal God, who, giving light to some, interposes a cloud between his rays, darkening the light for others. Have then as the supreme God He who created the world and taught the hearts of men, and call Him henceforward Pachacamac —He who is the real Creator and the vivifier of all things'!"

We see, therefore, according to these accounts,[1] that this Indian chief, who was not even an Inca, had raised up an altar to the "Unknown God"—a God, who, according to their beliefs, could have no tangible form and no visible representation in any image or likeness, yet who pervaded everything.

[1] The best accounts of all these matters are to be found in Markham's translations for the Hakluyt series.

CHAPTER XVIII

MINERAL WEALTH—*Continued*

In the last chapter I have touched upon the historical side of gold mining and finding in Peru. Gold is ever interwoven with man's history, wherever it may be. The principal miners have been, in their respective epochs, the old inhabitants of the country, the Incas and Aymaraes; followed by the Spaniards and Portuguese. Indeed, traditions in some of the gold-bearing regions aver that mining was carried on long before the Inca *régime*. During the colonial period of Spain a great development in mining took place, as has already been shown, and colonies of Portuguese became established, in the pursuit of this industry. In 1642, however, the Portuguese were prohibited from working, and they largely left the country. They abandoned, in some cases, partly-worked mines, many of which have recently been shown to be of much value.

Many of the quartz lodes of gold-bearing ores, which I have visited, have extensive old workings upon them, although these did not penetrate much below the oxidised zone, where the material is richer and more easily worked by reason of the dissolution of pyritical matter, and a certain natural concentration which takes place consequent thereon. The Indian miners extracted the gold—and still do so in some regions—by means of primitive appliances for crushing, known as *kimbaletes*. These generally consist of a hollowed-out block of granite with a rocking-stone placed therein—a species of huge pestle and mortar, into which the ore, broken up fine, water, and quicksilver, are fed. They vary much in size, being sometimes 3 or

4 feet in diameter, and often worked by two men. I have seen hundreds of these ancient appliances in the neighbourhood of the old mines, and have, at times, even used them for testing the value of the ores in my examination of these mines.

I have found the lodes sometimes honeycombed, near the surface, with old workings, and near at hand large heaps of ore which had been discarded as being of too low a grade for the primitive workers, or containing pyritous material which rendered it refractory to their method of amalgamation with quicksilver. The mining regions of Peru contain thousands of workings of this nature, which are lying idle or abandoned, and which will, some day, form the basis of extensive gold mining enterprise. It is true that they are often remote; that the country is broken and mountainous, and that roads are poor or non-existent. But it must not be forgotten that these very conditions contain certain advantages. The deep valleys and high summits crossed by the lodes permit these to be worked by tunnels run upon the ore-bodies: a more economical method than that of hoisting through shafts. The configuration of such mountainous regions generally assures the existence of streams of water in the valleys, and often of available water-power; whilst the lack of roads in the past has, at least, had the merit of reserving for the present generation what otherwise might have been consumed by a former. Some of the mines I have examined have the outcrops of the lodes 2,000 and 3,000 feet above their lowest available adit level on the valley floor, and the lodes varying from 2 to 8 feet, and in some cases up to 50 feet wide, are traceable for leagues across the country. Some of the lodes I have visited, containing complex ores of gold, silver, lead, copper, and zinc, in the same matrix, are more than 100 feet wide.

Of course, where the metal recovered is gold or silver the question of roads is not so serious, as the machinery once being established, the product is easily brought out on mule-back. But where other minerals are recovered,

or ore exported, it may render working prohibitive at present. Smelting operations, moreover, require fuel to be carried to the site.

Primitive smelting was practised in the metallurgy of the old inhabitants of Peru, in pre-Columbian days. I will translate a little from Zapata on the subject. He says:

"At first the Spaniards worked the mines, extracting only the richest ores (silver), treating them by means of smelting in furnaces where draught was artificially obtained by means of bellows. Afterwards, the Indians showed them the method which they had used, from time immemorial, for founding their metals. This they did in furnaces called *guayras*, which were of clay, of about a yard in height, nearly square, open above by four small apertures in the sides, and narrower at the bottom than the top. The ores, sufficiently wetted and incorporated with others that facilitated their smelting, were deposited in the apparatus, which was then filled up with some combustible, and the whole began to burn by means of the natural blowing of the wind, which gave a better result than the artificial draught of a bellows. This method of smelting was continued, so that at night, upon the heights of the hills, the lights of more than 15,000 little furnaces were seen. The word *guayra* means, in Quechua, 'wind.'"

Zapata, in the above, has quoted principally from Pinelo, and the mines where these operations were carried out seem to have been the silver-lead mines of Potosi. It is to be noted that these rude furnaces had something in common with modern smelting practice, and that they were of tapering or "boshed" form, as it is technically known, and such as is now used in smelter practice. I have found remains of these appliances in different parts of the country. In Tarapaca also, in the valleys upon the western slope of the Andes, I have seen numerous small primitive ore-smelting ovens, but of a different form, and which, although they present the appearance of long abandonment, did not seem to be of so remote a period as the Inca.

Silver is one of the most—perhaps the most—prolific

of the minerals of Peru. There is hardly any mining region where it is not found, and it generally accompanies gold ores, just as gold in Peru accompanies nearly all metallic ores, whether of copper, silver, or iron. To attempt to enumerate the silver mines of the country would be to fill a volume. The silver-mining region of the Department of Junin, in which the well-known Cerro de Pasco copper mines are situated, produced, it is stated in Government documents, silver to the value of £40,000,000 between 1784 and 1889. The country is dotted with small *oficinas* which mine and treat silver ores by lixiviation and amalgamation methods. Some of the better-known districts may be mentioned, beginning at the north of Peru, as Salpo, Hualgayoc, Huari, Huallanca Huaylas, Recuay, Cajatambo, Yauli, Cerro de Pasco, Huarochiri, Huancavelica, Quespisisa, Castrovirreyna, Lucanas, Lampa, Câilloma, Puno, etc., and a myriad of others hidden away in the valleys of the great Andean region. Nearly all the silver regions of importance are at high elevation in the broken country of the true Cordillera, generally upon the eastern slope. The ores occur principally in the sedimentary and metamorphic rocks, and chiefly comprise the sulphides and red oxides of silver. Argentiferous galena is exceedingly abundant, and it is a feature of the silver-mining districts that coal-beds are often found in close proximity. Water is generally plentiful; wood and timber often scarce, and the climate generally cold. There is a sort of popular saying among the miners in Peru that the gold seeks a warm climate, and the silver a cold one: a maxim which, however, has many exceptions. The character of the scenery where the silver regions exist is wild in the extreme, and often stupendous, as will be seen from the accompanying views.

The production of silver in Peru in recent years fell below that of former periods, owing to low prices for the metal. During 1904 the value was estimated at slightly under half a million sterling. There are signs that it is again increasing, due to better prices. The ores are

TYPICAL MINING HACIENDA IN THE ANDES.

often exceedingly rich, great "pockets" of the red oxides being commonly found within the lodes, a single one of which may constitute a fortune. Many of the silver mines have long ago reached water-level, and require draining in order to further extract the great *boyas* or *bonanzas* which remain, and which had to be left for that reason. These mines have generally been worked downwards by means of irregular shafts from the outcrop, and now tunnels or adits are being driven in from low levels in order to secure natural drainage and ventilation. This is the present condition of most of the Peruvian silver mines.

Much interesting history, ancient and modern, attends these mines. They have, like the gold mines, been the scene of toil and avarice in ages past, of cruelty and dishonesty; of bitter sacrifices, deferred hopes and vain expectations; as also of sudden wealth—the reward of toil, and the caprice of fortune.

The poor Peruvian native miner inspires me with interest and sympathy. What tales he unfolds as he accompanies me into some appalling and dismal cavern in the bowels of the mountain, excavated laboriously with the sweat of a past generation, where our flickering light falls faintly upon those grim subterranean walls, corridors, and chambers, and the dank and mouldy smell assails our nostrils! How eagerly he points out this or that great *boya* or chamber, where a vast pocket of rich ore was encountered, and details the history of the fortunate ones who found it! Driving on and on through the hard rock, sacrificing, perchance, their last coin to perforate those few remaining feet of rocky wall which separated them from the coveted treasure; and when at length the miner's eager chisel and practised ear detected by feel and sound the proximity of the valuable mineral mass, what joy, congratulations, and feasting followed thereon! How carefully he conducts me through those labyrinths and across those dark yawning pits, so respectful of my appellations of *inglés* and *ingeniero*! And I reward him by the interest I display, the sympathetic hearing I give

him, treating him like a fellow-miner, far more than in the silver coin I put into his horny and steel-galled hand at parting. Poor fellow! he hopes I will return with money and powers from those far-off "capitalists" of my far-off country to work those ancient labyrinths again!

Another of the "noble" metals which is found in Peru is quicksilver. There are several districts where this is found; the two principal ones being those of Huancavelica and Chonta. The old mines of Santa Barbara, at Huancavelica, had been among the most remarkable in the history of mining in the whole world. Their own history would alone form the subject of a lengthy theme. They have been visited and described by such *savants* as Bufon, Humboldt, and Raimondi, as well as numerous engineers of different nationalities. I have spoken of my visit there in another chapter, but may here touch lightly upon the history of *Azogue* in Peru, as quicksilver is termed in Spanish. This word, it may be said in passing, is of Arabic derivation.

Zapata says:

"Quicksilver mines were unknown in America before the Conquest, and some years passed before our people discovered them. The Indians worked them in antiquity, but not for mercury. They sought only vermilion, which is nothing else but the sublimated metal on the walls of the mine, and which was used by the women of the nobles to colour their faces."

The mines of Huancavelica appear to have been discovered in 1566, and were, as stated elsewhere, worked on a large scale for long periods, producing as much as 670 tons of mercury per annum, and rendering possible by their exports of the liquid metal the treatment of silver and gold ores throughout South America and Mexico. This mine was termed by the Viceroys of Peru "one of the greatest marvels of the earth," and it afforded considerable revenue to the Court of Spain for many years. It was worked without any method, excavating the cinnabar ore in vast

chambers insecurely supported, and at length fell in, entombing many of the Indian miners, it is recorded.

The ores were treated in small furnaces, using dried grass as fuel, and the vapour was condensed in earthen pots surrounded by water. This process was still being carried out at the time of my visit in December, 1904, and a heavy percentage of loss is sustained in the primitive operation. The ore is contained in a vast lode or deposit of sandstone, which traverses a limestone formation, and the outcrop and old workings are more than 2,000 feet above the city and river of Huancavelica. My project for reworking these valuable mines was to drive a tunnel from the river-level, upon the lode, using water-power and mechanical drills. The whole immediate region is traversed by cinnabar-bearing lodes; and a Company which should take up the enterprise of their exploitation might later be in a position to control the world's quicksilver market, for the material is plentiful.

At Chonta the ores were subjected to a primitive form of "pyritic smelting" in small furnaces, mixing iron pyrites with a material as a combustible, and firing with dried grass. I have spoken of these mines in the chapter upon the Upper Marañon.

In the three noble metals, therefore, of gold, silver, and mercury, Peru is well dowered. But most of the mines, whether partly worked or entirely virgin, are in a state of abandonment. It is often asked why this is the case; if such wealth is really contained there, why is it not taken profit of? And the reply is in the history of the country and the character of the people. The wealthy class, living formerly in luxury and idleness upon the easy proceeds of the nitrate of Tarapaca, until they lost it, troubled little about minerals so hard to win as gold and silver. They disliked to leave their comfortable capital, and to venture into the inhospitable fastnesses of the Sierra. Also, the frequent civil wars and revolutions prevented the spending of money on enterprises of any nature. The Peruvian character, moreover, does not lend itself to the working

of mines in the form of joint-stock companies. Quarrel and dissension too generally arise among the members of such, and sometimes bad management and insufficient respect for the use of the general fund. In addition to this, the roads and trails are difficult, and freighting expensive. So the Englishman, the American, and the Frenchman come in and benefit by this mineral wealth.

Here, then, are these numerous mines, holding untold wealth. They have been the scene of toil and greed, and cruelty in the past; let us hope that they will not be the subject of avarice and iniquity in the future. For it is a remarkable thing that the crystallisation of mineral matter below the surface of kind Mother Earth seems to call forth the evil qualities of mankind more than anything else contained within her exhaustless Cornucopia. The task-masters and evil-doers of a by-gone age have given place to the operators, promoters, capitalists and stock exchange gamblers of to-day, whilst the adventurous filibuster of the past seems to be succeeded by the business buccaneer of the present. Fortunately, however, we may at least congratulate ourselves that disinterested Science and Progress attend us in our winning of the noble metals, as time goes on.

CHAPTER XIX

MINERAL WEALTH—*Continued*

AMONG the base metals which will now form a source of industry in Peru is copper. The present demand and high price throughout the manufacturing world has stimulated the search for this metal, and some good copper-bearing regions have been taken up. So far, the mines of any importance are few, but this is largely due to lack of exploration rather than paucity of the material.

The principal region is that of Cerro de Pasco, the famous old silver mines where the American Company which purchased them has erected machinery capable of smelting, it is stated, 1,000 tons of copper ore per day. The ores contain 10 per cent., upwards, of copper — generally being much richer — and the mines have been characterised by reliable English and American authorities as being among the largest copper deposits in the world. The region is exceedingly high and bleak, its elevation above sea-level being more than 14,000 feet. The European and North American finds life exceedingly trying at such altitudes, and a constant change of employees is found to be resultant upon enterprises here. The altitude and rarefaction of the air, also, give rise to certain difficulties in the smelting, and, naturally, mining labour has to be recruited from among the indigenes of the Cordillera alone. In spite, however, of these matters, successful operations are to be expected, for, really, science and energy backed by money, can overcome all these matters.

This rich silver- and copper-bearing district of Cerro de Pasco is within a species of depression surrounded by the hills which form the "knot" of Pasco, one of the

main culminating points of the Andes; and the great ore deposits are described as a tertiary formation within cretaceous rocks. There are other smaller examples of this formation in Peru.

Not far away also are numerous regions with copper-bearing lodes, such as Yauli, Morococha, Huayllay, etc., all of which are beginning to come forward as producers of copper.

These copper mines of Cerro de Pasco furnish an example such as have often occurred throughout history, of mines being the cause of new influences and conditions in the life of a community. The North American spirit of enterprise and energy is having a marked effect on that immediate region. Railways, furnaces, and electric appliances are taking the place of pack-mules, arrastras, and other primitive methods, and wages are increased in accordance with the demand for more labour. These adjuncts of mechanical science are, as ever, accompanied by less desirable matters, and the Anglo-Saxons from the country of "big oaths and overalls" will certainly not yet be a refining element in the community. They will stamp certain conditions of energy, higher wages, better food and living, improved mechanical methods and other desirable matters upon the character of the Peruvian miner of that region; but they will also give some of their unlovable qualities of business cruelty, business dishonesty, lack of politeness and consideration for others, which mark them, and which seem to be an inevitable adjunct of business enterprise. Possibly the North American in Peru will learn something of polished social treatment from the Peruvians, as he has in similar situations in Mexico. The Peruvians, like the Mexicans, do not like the Americans, but they like American gold! On the whole, good will probably result from the contact of the two races.

These great Cerro de Pasco mines, upon which the North Americans have spent, it is stated, some fourteen million dollars in purchase and equipment, and which may become the largest copper producers in the world, might have been British, but British enterprise was too slow and

Coal Strata on the Pacific Coast.

cautious, and lost the opportunity in its preliminary stage. Copper exists, however, in many of the mining regions of the Peruvian Andes, and further exploration will certainly disclose new sources of the metal. Some of these regions are Moquegua, Cuzco, Andahuaylas, Ica, Huancavelica, Huancayo, Yauli, Chimbote, Cajamarca, etc. There are several *oficinas* which produce copper mattes; that of main importance being the Casapalca smelting works on the Oroya railway. The export of copper from Peru in 1900 was valued at only £620,000, and in 1904 £400,000, a diminution due to the stopping of the Cerro de Pasco output pending completion of the plant. The copper ores of Peru are largely tetrahedrites, grey copper ore, and chalcopyrites. They generally carry gold and silver in combination.

Lead is one of the most plentiful of the metals found in Peru—principally as galena—and bearing high value in silver. All the regions mentioned under the description of that metal are equally lead-bearing. The heavy cost of freight has prevented the export of lead, so far. Iron is found in several regions, but no attention has been given to it, as freight costs would be heavy in bringing the ore to the coast. The ore of zinc is a plentiful metal. Graphite, molybdenite, wolfram, nickel, cobalt, bismuth, magnesia exist, and will doubtless be worked in the future. Salt, sulphur, mica, borax, are very plentiful in certain regions, and coal and petroleum are valuable products. As regards coal, it is remarkable how little knowledge of the occurrence of this exists: even the most recent Encyclopædias stating that coal is scarcely found in South America. The coal deposits of Peru are one of the country's most valuable assets, and if they have not been much worked so far, it is due to lack of means of transport to the coast; and imported coal is at present placed in Peruvian ports at a less cost than the domestic product, notwithstanding its abundance. But this will doubtless be obviated later on, and, in addition, some coal deposits exist in Peru right upon the sea-coast, or in near proximity thereto. The varying classes of coal include

pure anthracites, bituminous coals, and lignites. The coal seams generally outcrop, and are often strong and of great extent. In one region a report calculates 400,000,000 tons of good coal "in sight"—that is, more or less exposed by upheaval and topographical formation. These coal seams are often workable by means of horizontal galleries from daylight, and sometimes by open quarrying. I have seen in some of the interior villages anthracite used in kitchen hearths, burning night and day, without chimneys, as the material gave forth no flame or smoke. To enumerate the coal-bearing districts of Peru would be to give a list of almost all the regions of the country, but a few of the better known may be mentioned, as: Cerro de Pasco, Yauyos, Huarochiri, Huancayo, Huallanca, Hualgayoc, Otuzco, Huaylas, Cajatambo, Huari, Islay, Huamachuco, Pacasmayo, Pisco, and a host of others. First-class coke is produced near Cerro de Pasco, and used for smelting. The anthracite has also been successfully employed in water-jacket copper-smelting furnaces in other parts of the country. The number of coal-bearing mining claims registered in the Government list of 1905 was 3,288, but the industry of coal mining is in its infancy, the production being only 50,000 or 60,000 tons per annum.

Sulphur is found almost commercially pure near the volcanoes of the south, and in the north the great desert of Sechura has formed the basis of a business for treating and refining sulphur, which is there found in great abundance. This sulphur is about 50 per cent. pure.

The production of petroleum is becoming an important industry in Peru. This is found principally in two regions — that near Lake Titicaca, and that at Tumbez—the latter on the coast in the northern part of Peru. There are several Companies engaged in the work of extracting the oil, principally organised with British capital. The output of these enterprises, in crude petroleum, kerosine, and gasoline for the year 1904, represented a value of about £150,000. The conditions for boring and extraction are favourable, and the deepest

well is 1,700 feet deep. A good deal of the product is used as fuel on the locomotives and elsewhere, on the west coast of South America.

It is seen, therefore, that a very wide range of minerals exist in Peru, and there is consequently ample field for industries connected therewith. The mining laws are, on the whole, good, with some defects which will probably be remedied in time. Title to property is held direct from the Government, and is ensured in perpetuity as long as the annual tax of £3 per claim is paid. The size of the claim, or *pertenencia*, is 2 hectares, of 100 metres square each—equal to about 5 English acres—for minerals in the form of lodes. For minerals in deposits, as coal, alluvial gold, etc., the claim is twice this size, or 4 hectares—equal to about 10 acres. Borax, nitrate, and kindred mineral deposits are subject to other measurements.

The mining enterprises which offer most attraction to the capitalist, as more likely to give commercial results at present, are—Gold mining, both quartz lodes and "hydraulic" mines, copper, silver, coal. Capitalists and their agents will find in Peru both Government officials and inhabitants who will welcome them in their enterprises, although in dealing with mine-owners firmness and circumspection must be employed, as Peruvian ideas are different to British in the conduct of business. Mining matters, whilst they arouse the spirit of enterprise of mankind, also arouse less desirable qualities, as I have averred elsewhere, and these are not confined to any community or race, but taint the methods of London, Paris, or New York, as well as shifty mine-owners in Spanish-American Republics. Personally, I have been defrauded both by Peruvian mine-owners and London promoters, so that I am in a position to form an impartial judgment as to race honesty in mining matters!

CHAPTER XX

THE INCA CIVILISATION

WHAT was the origin of the Incas and of their civilisation; or, rather, what was the origin of Man in America at all?

It is a subject that has called forth much study and speculation, and on the part of many and varying writers; and numerous theories have been advanced, the general one for the existence of Man in Peru giving him an Asiatic origin.

Why should we endeavour to trace all mankind to a common source? The tendency to do so is innate and strong—a species of "Universalism" which is alluring. Yet, if we accept the theory of evolution—and who after any careful consideration of Man and Nature can reject it?—why is it not equally rational or interesting to suppose that man became generated or evolved in all, or several, of the continents of the globe independently, and, perhaps, contemporaneously: that he is autochthonous in his varying habitat? There have been, in the different continents, varying grades of intelligence, whilst we seem to trace only one continent and region as being the real cradle of civilisation. This might seem to bear out the argument of autochthonous origin for men, for all races have generated, or developed, their native intelligence to some extent, but some generated the highest, due to circumstances of superior environment or other accident or design of Nature. This takes nothing away from the grand idea of Man's being, or creation: rather it shows more strongly the sublime principle—that matter and idea shall, and

must, personify themselves and materialise, in terms of the objective world.

If we dispose thus, then, of the origin of indigenous man in America we may still ask our first question as to the origin of the Incas, unless we choose to consider it replied to by the same argument: of natural development. Be that, however, as it may, it is interesting to briefly mention some of these theories, and nothing can be more just, as regards Peru, than to consider the opinions of scientific men of the country itself upon the subject.

In the *Journal* of the Geographical Society of Lima—Corresponding Member of which I have the honour of being—a review of the subject, published in the latter half of 1903, says:

"The Spaniards, on arriving in the new world, found a country different in every respect to their own, and since then it has been a matter of vast interest for science to find out from where the people of America really came; but the confusion of ideas and the difficulty—instead of dissipating—has become stronger. One writer states that he had found the language of Adam in a village near Titicaca—the primitive tongue which contains the roots of all modern languages—and that this place was the real cradle of civilisation! Other writers give this source, respectively, as Canaan, Judea, Egypt, Carthage, Norway, Japan, China, Syria, Mesopotamia, etc.; and all their claims are more or less based upon philosophical and scientific observations and deductions, which might seem to prove each and every assertion were it not that the claims are conflicting. And the only satisfactory result is to suppose that the continent had been visited by people from all these sources, who have left some influence of their characteristics; and to point to the possibility that strange dramas have been played out, of conquests, colonisations, and changes, upon the great territories of this continent we call 'new,' which are hidden from our knowledge of the world's history."

As is natural, a more or less miraculous founding of the Incas, their dynasty and Capital, was handed down by their descendants, and imparted to the first European arrivals in Peru. This miraculous origin seems ever to

be a part of man's history beyond where memory permits us to establish fact and law. As regards Peru, its legends and histories, attributes and conditions are well set forth by the many writers on the subject, from Sarmiento and Garcilasso to Prescott and Markham. I shall not refer much to these famous authors, as I rather prefer to translate from Peruvian writers, who have not much been heard of, perhaps — and to give the result of my own observations and travel, which latter I may modestly claim have been somewhat extensive as regards, at least. the present physical characteristics of the country.

I shall translate, among others, from the writings of Eusebio Zapata, a Peruvian man of science and letters, written in 1761. This interesting volume was given me in Lima, in March 1906, by Señor Ricardo Palma, a well-known Peruvian writer, by whom it was acquired in manuscript form in Madrid, in 1893, being a copy of the work presented to Carlos III., King of Spain, in 1761, by its author. I do not think any writings have appeared in English from this source, or indeed in Spanish. He says:

"The Empire of Peru, as far as the account of the knowledge recorded by the *Quipos* goes, was monarchical in its principles, governed by *curacas*, who were the heads of one or many communities. The land had as many lords as there were towns and communities, and each was independent of the other."

It must be here recollected that the *Quipos* were the Inca mnemonic archives, in the form of knotted cords of various colours — the only system of record the Incas possessed, as writing or hieroglyphic representations seem to have been unknown to them.

"The many conflicting interests caused war to be made by these different chiefs upon each other, and they committed the greatest atrocities that ignorance and malice could invent. Submerged in this barbarous condition were the inhabitants of these regions when Mama-Huaco, a wise woman, bethought herself of

civilising these ferocious people; making rational beings out of brutes and politicians from savages. She was pregnant, and feigned to have conceived by the Sun; and she gave birth to a son so beautiful as had never been known there, presently hiding him in the darkest cave of Tia-Guanaco."

This place, I must explain, is the island in Lake Titicaca, which was the cradle of the Inca race and civilisation, and where are found some of the marvellous old buildings and monoliths which they erected.

"As soon as the child was a few years old, she exposed him on the summit of a hill, dressed in earrings and sandals of gold, and prostrating herself, in company with her daughter, Pilco-Sifa, before him, adored him as the Supreme King and Lord of that country."

Here, it may be noted in passing, are incidents not unlike some in the Christian Bible.

"The Indians, who from the slopes of the adjacent hill witnessed this performance, wished to learn its meaning, and were informed by the mother and daughter that the child was a son of the Sun; upon hearing which they also fell down and worshipped him, acclaiming him as the Inca and their sovereign. The news went forth throughout the region around Titicaca, and to the most remote provinces, that the Sun had sent his son in order that he might govern them.

"Thousands of Indians congregated, and, assured of the perfection of the young child, did not doubt that he was a son of heaven; and acknowledging him as the son of the orb which they worshipped, they called him 'Manco-Capac,' which, being interpreted, means, 'Almighty Child'; and 'Huac-Chacuyac,' or 'Lover of the Poor.'

"The child grew up adorned with all those gifts of mind which the heavens concede to those destined for vast enterprises. He was exceedingly wise and prudent, as he had been schooled by his mother, the great heroine Mama-Huaco. Before using the rights and power of his sovereignty he created the laws of his Empire. The first

of these was the cult of the sun as the Supreme Deity or life-giver, and for this purpose he reared temples, which were known as Huacas, which signifies prayer, or grief. He established the sacrifices of animals, but the sacrifice of human blood was forbidden under the severest penalties."

The Inca, it is generally stated, never permitted human sacrifice, nor cannibalism. They were guided strictly by the laws of Nature, say various writers.

"Having ordained the religious cult, he imposed the laws which were to be observed regarding the succession to the throne. The first-born were to be called *Inca*, and they were always to marry their own sister, who was to be called Coya. Any son born of another woman was to be considered illegitimate; and the object of this was to prevent the decadence of the house by intermarriages. This custom and principle was observed inviolate from the first monarch to the last.

"It was also ordained that the first-born should not inherit his father's riches, but that these should be divided among the royal family and the temples. Details of royal dress were arranged, and ordered to be observed, and an exclusive language was to be used by the royal family.

"After having established these laws he disposed those which were to be kept by the people. He ordered as the first of these that 'they should love one another.' Polygamy was made illegal, and also marriage at a less age than twenty. Marriage was only to be with women of the same lineage. The death penalty was dealt out to robbers, murderers, sodomists, adulterers, and liars."

Zapata here quotes several Spanish writers, who express their admiration and approbation of these laws, and their surprise that such should have been instituted by a barbarous nation.

"Manco-Capac married his sister Mama-Ocllo-Huaco, who was the first to have the title of *Coya*, or Empress. She devoted herself to teaching the Indian women the arts of spinning and weaving the fine wool with which the country abounded, whilst Manco occupied himself with giving the people laws of agriculture. The just fruits of all work these monarchs endeavoured, by a

system of economical government, to distribute to the enjoyment of all; and the Indians of the country, seeing the justice and order of this *régime*, continued in their belief that these were the children of the Sun; and the vassals of the new dominion increased rapidly.

"Becoming too numerous for the island of Tia-Guanaco, the court and people passed to Cuzco, making this the Capital and centre of the Empire. Upon dying, Manco charged his descendants to continue the enforcement of the good laws he had inaugurated, and exhorted them to extend the boundaries of the Empire to the regions most remote."

His successors followed these mandates, and each one enlarged the dominion, until, in the zenith of its power, it embraced territory 2,000 leagues in length, when decadence set in, after a total existence of more than five hundred years.

The thirteen Incas and their respective Coyas, from Manco-Capac to Huascar and Atahualpa, include the names of all those famous in the history of that time, all of which flourished before the advent of Pizarro and his Spaniards. At that time the Empire was divided by rival claimants to the throne, as the last Inca seems to have left no truly legitimate descendant. This seems to have been the signal for its downfall.

Such is the description given by Zapata, and though it differs somewhat from other historians, it is perhaps equally acceptable. The first Inca — Manco-Capac — seems to have flourished at the end of the eleventh or the beginning of the twelfth century of the Christian era. One of the most famous of the Inca — if such he truly were — was Atahualpa, disputant with Huascar for the throne, and who was traitorously murdered by the Spaniards. His fate reminds us of that of the unfortunate Guatemoc, of Mexico, who was also murdered by the Spaniards for the recovery of his gold.

It is contended by many writers that there was a pre-Inca period, of a superior and probably foreign race, and that the Incas learnt their building and other arts from them. Recent investigators have endeavoured to prove

this, after examination of the Inca ruins and the *Huacas*, or old burial-places. I will not pretend to dispute this, for my part, for to speak with authority would require more study of the matter, and more knowledge of such subjects than I have had time or opportunity to acquire. But I merely in passing make the observations that the theory and distinction seems rather a fine or fanciful one, and must be regarded as "not proven." Of course there were numerous warring tribes pre-existing, who were builders of rude structures.

According to the foregoing history of Zapata it seems that Manco, or his mother, was simply a superior unit of a race which separated itself from the bulk and set itself up, following the dictates of a natural aristocratic organism of mind and body, and the rest followed naturally. It is, in effect, an everyday process among any nation, civilised or barbarian, that individuals so separate themselves by some natural effect of concentration, when, if they were enabled to give full play to their ideas and actions, they acquire a position above the common bulk, and in the lapse of time fable envelops them.

As regards the theory of pre-Inca occupation of the country and their supposed temples, I translate the following from an article by Dr Pablo Patron of Lima, one of the most eminent Peruvian students and writers, whose words are worthy of all consideration and weight. The article was read at the Congress of Americanists at Stuttgart, in August, 1904. He says:

"I do not think that there has been in Peru, in primitive times, any special race different from the actual race, constructors of Cyclopean works. All these works which exist in Peru have been made by the Aymaraes and Quechuas during the time of their greatest culture. The most notable of these, those of Tiahuanako, prove it. The ruins which we contemplate to-day are those of the temple reared by the Aymaraes in honour of Huirakocha, in remembrance of the creation of the world by him, according to their cosmogenical beliefs, in Lake Titikaka. It is not necessary to have recourse to indirect arguments to demonstrate this. On the monolithic portal of Akapana

Lake Titicaca: Temple of Viracocha.

Huirakocha is shown in the centre with a fish having a human face sculptured on his bust, this supreme God of the Andeans being the 'Abyss of the Waters,' as *Ea* was among the Chaldeans. Later, Huirakocha was confounded with the tempest. Moreover, the name of Huirakocha is sculptured repeatedly upon the same portal according to the iconographic system of writing general to America."

It is interesting to compare the above with statements relating to the megalithic structures and hieroglyphics found on Easter Island, 2,400 miles westward of the South American coast. Have these structures anything in common with those of Peru? Some writers endeavour to trace a connection between these remains and the Inca and Aymara civilisation of the Andes.[1] I received from the Admiralty an extract from the log of H.M.S. *Cambrian*, which, with the *Flora*, visited Easter Island in July 1906—giving an interesting description of that place. An account was also published in the *Press*, recently written by a member of that expedition; and it will be of interest to reproduce some of the ideas given there, as bearing upon a possible connection between the two matters. The account says:

"Tradition tells that they (the prehistoric settlers of Easter Island) came in two canoes, their king, Hotu Metua (Prolific Father) in the one, and their queen in the other; that they found this island which they called *Te pito fenua* ('the land in the midst of the sea'), and that here they settled and made their homes. There are the hieroglyphics chiselled on the faces of the tombs and on the crater walls; line upon line of curiously-carved shapes and symbols. to which, alas! there is no key. The shape of a fish appears most constantly, and coupling this with the conspicuous sea face of the papooka, it may be that this people, wafted across the ocean to their island home, held sacred some finny monster of the deep. Probably, if one could but read the tale written on these stones, then indeed might the veil be lifted from many a mystery which surrounds the peoples of the Andes. These carvings

[1] *Man*, for January 1904.

of Rapa Nui bear a remarkable resemblance to those of the Aymara, an ancient race of Peru."

But it is with Egypt, perhaps, that an origin is most commonly traced, and various points of similarity are advanced to prove a connection between Peru and Egypt, among them being: the cult of the sun, and the symbol of the serpent; the construction of hydraulic works, and the encouragement and initiative given to agriculture by reigning monarchs; the use of copper tools, tempered in a special manner; the working and transport of monoliths by unknown methods; the tendency to pyramidal form in edifices; the tombs and mummies — the embalsaming of the dead; the rafts or junks of Lake Titicaca, said to be similar to those figured on the tomb of Ramesis III.; and other matters real or fanciful.

As to the true descendants of the Incas there appear to be none remaining. Zapata, from whom I have previously translated, says:

"There is not known in Peru to-day (1767) any pure Indian, formerly descendent of the monarchs of that Empire. The few who might have proved this origin are already Spanish in their greater part. If any Indian were to pretend to any genealogy with the royal house it would be very difficult to prove."

He then goes on to show that intermarriage has rendered impossible any real descendants, and further advises "that any magistrate should punish with severity any Spaniard or Indian who, proclaiming himself an Inca, should so pretend to foment rebellion or discontent among the people."

Many of the Indians—the Cholos or Quechuas—still believe that an Inca will yet return and establish the old Empire again; and truly their lot was, if history be true, superior during that old *régime* than under the present system of so-called Republican government, which seems unable yet to come really into touch with the Indians. That, however, is but a dream, and the future of the Indian must be worked out in accordance with the modern development of the continent he inhabits.

Zapata is emphatic in his conclusions regarding the descendants of the Inca. He writes :

"There is another error much more pernicious than that I have refuted. It is the story that one of the Incas of Peru retired to the forests of the Orinoco and populated those extensive regions. This fable was fomented in the accounts of the Admiral Raleigh, in the years 1595 and 1596, who reduced to ashes the cities of San Joseph, in the island of Trinidad, and Cumana, on the coast of Guayana, for which, at the solicitude of the Emperor of Spain, the Parliament of England, under various pretexts, ordered his head to be cut off in Westminster, on 29th October, 1618. The Inca imagined by this malicious Admiral was not of the monarchs of Peru. He was Ruminavi, a general of Atahualpa, who, having traitorously shed the legitimate blood of the Inca at a banquet, was so hated by the Indians that he retired to the Orinoco forests, where he died, devoured by wild beasts. I do not know where Mr Raleigh discovered this thing of the supposed Inca of the Orinoco ; probably from the same place where he produced the foolish prognostications which he pretends, with derision of Indians and Spaniards, was found in the temple of Cuzco, in favour of the English, who well repaid him the vanity of these desires which had been forged in dreams and frenziedly written upon paper!"

There is probably more prejudice displayed, however, than impartial rendering of history in some of the statements of Zapata, and I only record them to give the views of a Spanish Colonial writer.

CHAPTER XXI

THE INCA RUINS

THE ruins of the buildings of the Inca and Aymará periods are encountered in almost every part of the great territory of Peru, to say nothing of parts of Ecuador, Bolivia, and Chile. These are ruins of temples, of fortresses, of castles, of dwelling-houses, of cities and of tombs, mounds and pyramids, as also of bridges, aqueducts, and roads.

As far as they are concerned structurally, these ruins may be divided into three classes:—those built of adobe or sun-dried earthen bricks; those of loose blocks of unhewn stone, with or without mortar; and those of hewn or worked stone.

The buildings of the first kind are generally found upon the western side of the Andes—the Pacific or coast-zone; and this was probably a result of the climate—the rainless region which permitted the use of such material. It is remarkable how these, which are simply structures of dried mud, have retained their form throughout the centuries. Among this class are all those numerous ruins of temples and villages found at different points nearly all along the 1,500 miles of Peruvian coast-zone, and include Pachacamac, near Lima, the one-time wonderful temple dedicated to the god Viracocha—and those near Piura, Chimbote, Casma, Pisco, etc., some of which I describe elsewhere. The stone structures are found on the plateaux and the Cordillera, where they are exposed to the heavy rain of these regions. Those built of unshaped stone are exceedingly numerous. They are found all over these vast upper regions; they crown every hill

Cuzco: Base of the Palace of Huayna-Capac.

in some districts, and line the slopes and bottoms of valleys. The material consists of natural blocks of limestone, quartzite, or granite, unhewn and unshaped just as they have been collected from the talus or *débris* of mountain slopes, or dug from the loose strata of the rock outcroppings. The buildings take the form of castles and villages, which appear to have been constructed by various tribes as though for protection against each other's raids, as I have described in the chapter dealing with my journeys on the Upper Marañon. Indeed, to my mind, the description of these old settlements—huge human "warrens"—strikingly bear out the statement made by the historian, which I have before given, that "the land had as many lords as there were towns and communities," and that, "the conflicting interests caused war to be made by the different chiefs." It is remarkable how the most inaccessible places were selected often. I have seen them on the most precipitous summits, especially in the Department of Ancachs, in the region of the Upper Marañon.

The hewn-stone edifices—the true and lasting works of art of those people—are much less plentiful, as is naturally to be expected, being, as they are, principally in the nature of palaces and temples. The remarkable characteristics of the stone-work are, first, the excessive care with which the joints were fitted, leaving no space between, and yet, in spite of this, the indifference to horizontality or verticality in the sides of each block, in some cases.

In my description of the ruins of Huanuco Viejo, I have given diagrams of this noticeable feature of their stonemasons' art; and it is also shown in a remarkable way in some of the views of the edifices of Cuzco, especially in that of the Palace of Huayna Capac and Pachacutec. One of these stones goes by the name of *Hatum-Rumi*, and forms an irregular polygon of twelve entering and salient angles. *Rumi* means in Quechua "stone," and *Hatum* "large." They are of granite. Notwithstanding the many varying sides and angles of these stones they fit perfectly into those placed against them

in the wall. In some of the structures, however, this feature does not exist; the blocks are cubical in form, with horizontal sides and square corners, and are simply placed together in the ordinary way. It has been suggested that these are of later date than the former.

The other remarkable characteristics of some of these structures is that the blocks are great monoliths. These are described in various of the existing books upon Peru, and some of the largest are stated to be 38 feet long, 18 wide, and 6 thick.

How were these shaped, brought from their quarries, and raised into position, are the problems which occur to the observer, as they have occurred regarding the ruins of the old structures of Asia and Africa.

The most remarkable of all these stone buildings are those of Titicaca, and those of Cuzco and its immediate neighbourhood, which latter city was the Capital, and centre of the Empire. These palaces of Huayna Capac, and various other buildings, including the Temple of the Sun, are situated in the streets of the city of Cuzco, and in some cases form part of the modern edifices. Others, near at hand, are the remarkable ruins of the fortress of Sacsaihuaman, Ollantaitambo, and those of Intihuatana—which I speak of later.

Zapata says of these:

"Among the most memorable edifices which the antiquity of our country presents, is the fortress of Cuzco—a marvel of art. This great castle is situated in Sacsa-Huaman, a high hill to the north of the city, and is the work of Pachacutec, Emperor IX. of Peru, who spent half a century in its construction. It is more than 400 yards long. The rows of stones are of varying height, and so well united that no mortar is seen. In front of this wall the slope of the hill continues, and here, in this, were built three more walls, each 200 yards long. The stones of these were not similar to the first; they are so great that it can only be supposed that the Indians understood the art of 'melting' them, and casting them in moulds of that size. There is not wanting those who have attributed to diabolic agency the artifice and perfection of this work."

BASE OF THE PALACE OF OLLANTA.

Zapata, therefore, seems also to hold the curious opinion that the Indians were acquainted with some wonderful method of softening and moulding stone, a belief such as is still current among the Indians of the present day, who have assured me often that this was the method employed. They do not refer to the making of ordinary concrete, because these are all natural stones. I have spoken of this in the account of the ruins of Huanuco Viejo.

Zapata goes on to describe these buildings in detail, with their subterranean chambers, and stories and legends of the vast quantities of treasure in the form of gold which they contained. He speaks also of the enormous monolith which lies near the fortress, and which its artificers had not been able to carry to the end of its destination. This stone is stated to be 70 feet long, $3\frac{1}{2}$ thick, and 5 wide, and was said to have been brought from near Quito, 500 leagues away, carried by 4,000 men. The fable of the Indians is that it wept tears of blood when abandoned. I think that a recent Peruvian writer has found that this stone was brought from a quarry very much nearer: and that some of the monoliths were floated into place before the drying-up of the lakes there.

Other buildings in the same neighbourhood Zapata also describes, and speaks of stone lintels 30 feet long, 15 wide, and 6 thick; and of numerous stone images of men and women, the former with cups in their hands, the latter carrying children. He quotes from other writers who suppose that these remarkable works were made by some former unknown race, adding that in his opinion this view is erroneous; that the absence of arches or vaulting precludes the probability of their origin being from nations of the other hemisphere, and that the non-existence of records of their construction is doubtless due to the fact that the custodians of the *quipos*—the archives and history kept by the system of coloured and knotted cords—had died before their records could be perpetuated by the Spaniards. He also instances

their use of copper dowels and lack of knowledge of iron, in support of this. Zapata quotes principally from Pinelo, Garcilasso, Ulloa, Pomanes, Acosta, Cieza, Avalos, Herrera, Gamboa, and other Spanish writers, some of whom, he states, have personally seen the ruins; and he gives their words in the original text, adding: "I have not wished to copy or vary them, because water is always clearer at its source, and there one should drink, rather than in the gutters which it enriches."

I have mentioned in a previous chapter the ruins of Intihuatana, which are about 14 miles from Cuzco, near the river Vilcanota; and I will translate from an article in the *Journal* of the Geographical Society of Lima, published in 1904, written by a Peruvian, Señor Oyague, who visited the ruins recently. He says:

"It is not easy to get there. From the outside of the village begins a barrier of formidable *andenes*, reaching to the summit of the hill; a vast stairway of more than forty steps of 4 to 6 feet high, and now covered with thorny brushwood. From the principal ruins a magnificent panorama is obtained of the valley, and the place is essentially a strategic point. Here exists a species of semicircular tower united by stone outworks to the other edifices, and which has undoubtedly been the place where the sentinels lived. Further back in a small depression are seen the buildings which surmount Intihuatana.

"This, of great interest archæologically, is a large rock, unbroken, square, and in whose centre stands up a cylindrical column, worked in the rock itself, but now broken. This stone is enclosed in a circular tower with a single entrance, and that which causes most surprise is the finish of the stones and their perfect union, without any mortar.

"The tower was an astronomical observatory, where the equinoxes were determined. Around it, over a large extension of ground, are numbers of halls, corridors, and remains of habitations, all part of a perfectly conceived plan — a fortress well defended. The abrupt precipices which surround it would render surprise impossible, and, moreover, any weak point is protected by high walls of worked and polished granite. Upon all the rocks that

surround the ridge run roads whose colossal *andenes* rise from below, and at certain distances are found doors, passages, stairs, towers, prisons, and habitations, seemingly suspended on the highest summits, and in places where the imagination of the most daring builder of to-day could scarcely conceive the planting of an edifice. How have these monoliths been taken up to these situations? They have not been manufactured upon the spot, but were brought from distant quarries.

"Somewhat further on one observes, at a great height, sepulchres excavated in the rock walls, some open, others intact. This is the necropolis, where, doubtless, thousands of the dead repose, having escaped, by reason of their positions, the avarice of the conquistadores.

"At what date were these remarkable works erected? It is difficult to determine, as the old chronicles are silent in this respect, but it was probably during the reign of Pachacutec, in the fourteenth century. Marta Capac (twelfth century) inaugurated the era of the great edifices; Huayna Capac (sixteenth century) terminated it.

"We now see what Intihuatana was: a fortress and astronomical observatory. And, indeed, in the principal building was enclosed the sacred rock, where the vestiges of the broken column are still seen, and which is also described by Garcilaso and other old chroniclers, and was the venerated place where observations for the determination of the equinox were taken.

"The rudimentary knowledge of astronomical science possessed by the Incas was reduced to the determination of the solstices and the equinoxes. They determined their year, and divided it into twelve months, beginning at the December solstice. To determine these epochs they used stone columns, richly worked and covered with plates of gold. The priests charged with this sanctuary and office were accustomed to observe the shadow of the column, at the approaching day, and which was the centre of a great circle wherein was inscribed a line from west to east—which experience had shown them how to place. By means of the shadow of the column upon this line they were enabled to announce the proper day, which was celebrated by great feasts; and the throne of the sun was brought and placed upon the column, so that the sun might 'sit down.' From this is derived the name of Intihuatana, meaning 'the Seat of the Sun.'

"These astronomical pillars, many of which were in existence both in Peru and Ecuador, were destroyed

by the Spaniards who considered them useless and idolatrous."

The writer concludes, deploring the ruin into which these interesting relics have fallen, and the wanton destruction which takes place in using the stones for other purposes; and draws the attention of the Government to the necessity for their preservation.

It would require a whole volume to fully describe all the old ruins of structures of those prehistoric epochs. Indeed, several volumes have given space to their description, such as the well-known works of Prescott, Markham, Squires, etc., and, of course, the old Spanish writers, upon which latter all Inca history is based. Many of these structures lay too far out of my line of travel to permit me to observe them, although I may claim, perhaps, to have travelled more extensively in Peru as a whole than any other foreigner, as far as leagues covered are concerned; and the numerous remains of prehistoric buildings which I have visited, if secondary to those of Cuzco in importance, are nevertheless of much interest, and permit a somewhat comprehensive view of the whole to be formed. In the following chapter I have described the ruins of Huanco Viejo, or Old Huanuco—sometimes spelt "Guaneso," for "G" and "H" in Spanish have almost similar pronunciation—and also, elsewhere, the Castle of Chavin, and other structures. These lie to the north-west of Cuzco, in the Department of Ancachs, about 400 miles away. They were described in a paper read on my behalf before the Royal Geographical Society in January, 1905, by Sir Clements Markham, and which was published in the Geographical *Journal*. A portion of this has been reproduced in a previous chapter. No account of these ruins has been previously published, I believe, in any work in English, or indeed in any other.

The Inca and Quechua people sepultured their dead, frequently, as mummies. Very extensive cemeteries are encountered, both in the Coast and the Sierra regions, and are known as *huacas*. The mummies were enclosed, often, in small rooms, or vaults, built of unhewn stone;

and I have observed veritable "warrens" of these structures on the hill-slopes and the valleys. In the valley of the Rimac, on the line of the Oroya railway, not far from Lima, there are some extensive cemeteries of this nature. Search is made for mummies, sometimes, by the method of driving a thin steel rod into the ground in spots likely to contain such, when the diminished resistance encountered by the drill shows the presence of the mummy. Some of these *huacas*, or burial-places, are seen strewn with mummy-cloths, bones, skulls, and other evidences of the desecrating ravages of man, animals, or the elements.

In the caves in the limestone or quartzite formation of the Sierra, bones and mummies are also encountered, and generally these remains are reverenced and feared by the Cholos of these regions. "Do not enter, Señor," they have said to me, when I desired to explore the depths of some lugubrious grotto. "Some evil befalls those who enter there," and I have been obliged, sometimes, to go in quite alone.

Strange and weird are many of the old structures which the traveller in these almost unknown regions of the Sierra encounters. Rude towers and habitations, fortresses and defences of unhewn stone, piled up on the summits of hills, or commanding the heads and passes of valleys. At nightfall, on my travels there, I have slept in these old Inca structures, sheltered to escape the pelting rain and cold winds of the uplands; and I have even made use of the kitchens of the former inhabitants—the mysterious "Gentiles," as they are termed—and my men have cooked our evening meal there. Starting from amid the mists on grim escarpments as you round the base of a hill, or stretching away in a golden haze among great areas of *andenes*, you behold them, uninhabited, solitary, grim. And at night, as you lie upon your cot, looking at the flickering camp fire's flames, and listening to the tales and folk-lore of your men, as in a mixture of Spanish and Quechua they recount to you strange things, the Andean wind howls mournfully past and whispers among those old places where man once

dwelt, inhabited now only by mummies and bones, and skulls. Ha! stir up the fire, Jose or David or Felice, or one of you; roll me another cigarette, and see that the mules have not strayed away!

There they remain, then, these ruined structures. As for some of them, it is impossible to conjecture what their purpose was—

> "Temples, baths, or halls? Pronounce who can,
> For all that learning reaped from her research hath been
> That these are walls!"

CHAPTER XXII

THE RUINS OF HUANUCO VIEJO

On 7th February, 1904, I made a deviation of some leagues from my route to the Marañon, on purpose to examine, as far as time would permit, a group of extensive ruins of the Inca period, known as Huanuco Viejo.

The plain upon whose western verge the ruins are situated is a remarkably level tableland, whose geological formation appears to be quartzite and limestone conglomerate, or compact gravel—or, at any rate, its northern and eastern edges show as such; and the hills bounding those sides are vast cliffs of similar material, which I had hoped were auriferous deposits. The altitude indicated by my aneroid was 11,880 feet, and the temperature was not so cold as to be uncomfortable, even in the tent at night. Sleep was, however, much disturbed from the necessity for continual vigilance in order to avoid the mules being stolen in the night. The plain has a bad reputation as a resort of cattle-thieves and horse-thieves, and I was afterwards congratulated upon not having lost any of the animals by these midnight Indian robbers. My method was simple. Apart from keeping the *arrieros* awake, at any signs of fright upon the part of the mules—for these generally indicate in an eloquent manner the presence of a prowling robber—I lifted up a corner of the flap of the tent nearest my cot, and discharged a couple of revolver shots into the night. These Indian thieves have a wholesome dread of a pistol ball, and the method proved effective, both here and elsewhere.

On the following morning I started out early to examine the ruins, and found them very extensive. Unfortunately, the films of my little hand-camera had given out, and it was

not possible to take photographs, but the sketches which accompany this will give a very fair idea of the architectural features of the ruins. Dimensions were obtained by pacing and compass triangulation, and it is not pretended that they are more than approximate except where exact measurements were made. Some of the sketches were taken on mule-back, and all were made as faithfully as circumstances would permit. All these were published in the Royal Geographical Society's *Journal* for August, 1905, but only a few appear here.

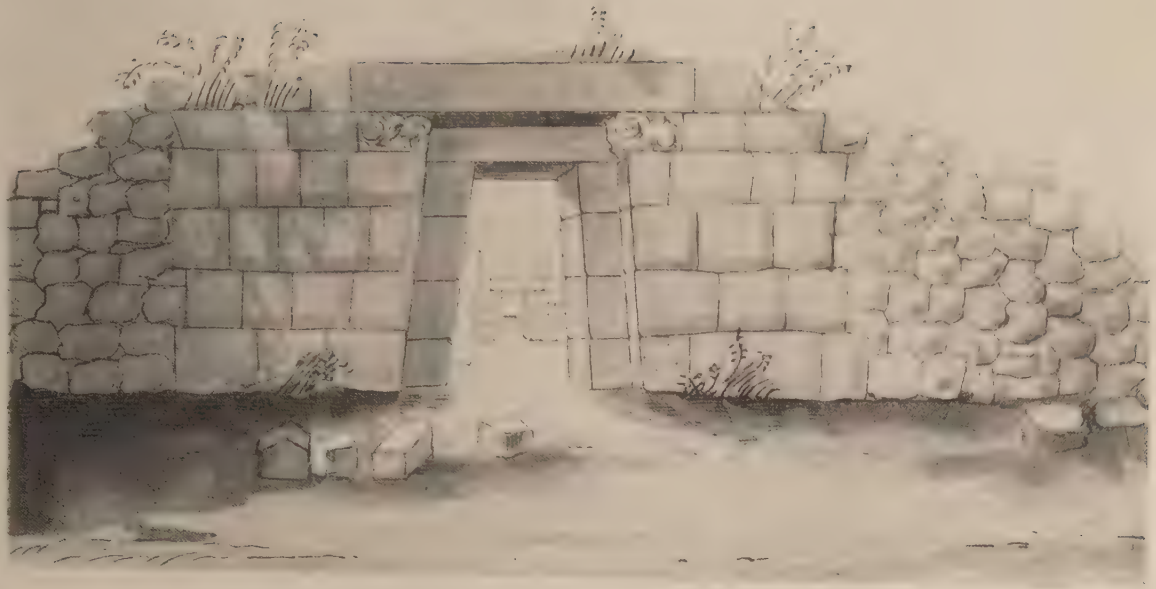
The well-known Peruvian traveller and scientist of last century — Raimondi — visited these ruins, and in one of his works gives a brief description and a sketch of them. This latter, however, is by no means faithful to the original. My friend, Doctor (of laws) Cisneros, Chief Justice for the Department of Ancachs, and who was Raimondi's companion in his travels in 1870, informed me, nevertheless, that they took careful measurements of these ruins, but which do not appear to have been published. In the work before mentioned Raimondi quotes from a previous historian (Garcilaso), who states that

"In March, 1533, Hernando Pizarro, the brother of the *Conquistador* Francisco, arrived at the city of 'Guaneso' (or Huanuco). It was a *casa real*, or royal palace, built of large stones very skilfully set, and was so important in the time of the Inca that there dwelt there continually for the service of the Inca more than 30,000 Indians."

The foregoing quotation I have translated from the Spanish of Raimondi.

The sketches and descriptions will give an idea of the extent of the principal or central portion of the city; beyond, nothing remains but the foundations of numerous habitations. About a mile away, however, to the west, and built upon the limestone hills which rise from, or rather bound the plain, are the foundations and streets and walls of what has been an extensive community. These are described later.

The architectural features which are most noteworthy are the stone doorways to the palace, and the castle or



RUINS OF HUANUCO VIEJO: ONE OF THE DOORWAYS TO THE INCA PALACE: LOOKING WEST.
Sketched on the spot by the Author.

P. 230.

fortress. I made careful measurements of one of these doorways, and the illustration shows exactly the style of architecture. The stones which form this part of the work are very carefully cut and fitted, and it would seem that the builders have made up in laborious care and exactitude what they possibly lacked in skill or appliances. The stones have been worked, it is presumed, with copper tools, for the Incas were unacquainted, it is generally stated, with the use of iron. The joints of the stones are so closely fitted that a knife-blade cannot be introduced, and no cement or binding material has been used, apparently. The bedding is not necessarily horizontal, nor the upright joints vertical, the stones having been cut to fit each other regardless of uniformity. Some of these stones are of large size, as the lintels, which are monoliths of more than 2 metres in length, and of the whole thickness of the walls. The stones which form the reveals are often rebated in order to form bond.

The walls generally are about 90 centimetres in thickness; the stones appear to have been set in place, and the next, or following stone, fitted laboriously to its companion, as previously stated. Bond is formed by stones which traverse the thickness of the walls. The carving of the capitals, like most Inca carving, is rude, and represents either a scroll or a species of lizard or other animal. I have sometimes thought that the Inca scroll may have been suggested by the large petrified ammonites, so common in the limestone formation of the Andes. I have spoken of these fossils in another part of this account. Of course, the carving may have another signification, connected with the marine emblem of the Incas, as in Cuzco. This is spoken of in a former chapter.

The faces of the stones still show what are undoubtedly tool-marks, for the hard silicious limestone of which they are composed has shown no alteration under the action of the elements. Rather, it has acquired with age a beautiful faintish-red tint, and a distinct polish.

I have elsewhere spoken of the ruins of the Castle of

Chavin, which I also visited for the second time on this excursion; and in this connection may be mentioned a belief or supposition among the natives with regard to the formation of the stones with which that castle is built.

They state that these stones have been modelled—not cut; that the Incas were acquainted with some herb, an infusion of which, poured upon stone, caused the latter to become plastic, when it was easily moulded into any required shape. It is stated that upon one occasion some individuals having discovered a subterranean chamber belonging to an Inca dwelling, accidentally overturned an earthen vessel which they found there, and which contained some liquid. The contents falling upon the floor, caused the stones of the pavement to become soft, like dough; and the aforesaid individuals observing this, endeavoured to save a portion of the liquid, but without success. They then turned their attention to another similar vessel which stood near by, also containing a liquid, and pouring a portion of this upon the stone, they observed that the latter resumed its usual consistency!

I do not know that there is any foundation for these suppositions, and only give them for what they are worth. The stones spoken of are, it must be added, certainly not formed of artificial material, as terra-cotta or concrete, but are natural stones.

In the east wall of one of the small chambers or passages of the palace exist two pairs of holes in the masonry, 15 centimetres apart, and about the height of a man from the ground. These, it is stated, were "gallows." A rope was presumably passed through these holes and around the neck of the condemned; the stones upon which he, or she—for one side was for men and the other for women offenders—stood, were then removed, and the latter left hanging by the neck.

The Royal Palace, if such it were—and there is no doubt that the Inca inhabited the place—is shown in the sketch. It consists primarily of two halls, each about 75 metres long and 10 wide, followed by two courtyards, to

HUAÑUCO VIEJO: RUINS OF THE INCA PALACE, LOOKING EAST.
Sketched on the spot by the Author.

which access is gained by the portals or stone doorways shown on the plan. There are six of these doorways, all beautifully formed of cut stone, and more or less all alike. As shown in the figures, they are of typical Inca trapezoidal form, with sloping sides, and very solidly constructed. Possibly there is a suggestion of something Egyptian about them.

A remarkable feature about the plan of this edifice is that of the arrangement of the doors upon a "visual line." This may possibly have been accidental, or undesigned, although I have heard it stated that it is the result of some certain purpose. The observer, standing at the western side, or even near the fortress, has a clear view right through the openings, and in like manner from the eastern extremity—the baths—finds that his line of sight passes all these apertures and rests upon the wall of the fortress in the distance. This is made clear upon the illustrations. Possibly the arrangement was connected with the sunset, as the "visual line" is nearly east and west.

Only portions of the masonry are of worked stone; the rest are of unshaped, or very slightly shaped, stones, but are nevertheless skilfully set and bonded. On the western face of the southernmost of the two halls are nine doors and window openings, occurring alternately; and on the other nine doors and no windows. On the eastern side are the baths, whose walls are all of carefully cut stone. These are shown on the sketch. All around these buildings are the ruins of numerous dwelling-houses, which from their less careful construction have not withstood, except in some cases, the destructive action of time. Moreover, the native shepherds are continually removing the stones to form *corrals*. It is not possible to determine exactly of what the roofs of these buildings were composed. There are no vestiges of timber remaining, and the construction is not such as to suggest that they were of stone, dome-shaped. Probably they were of thatched grass supported on rafters, and this would seem to be borne out by what appear to be gable ends, as shown.

The fortress, or Temple of the Sun, if such it was, is rectangular in form, very solidly constructed of cut stone blocks, surmounted by a cornice composed of a fillet and cavetto, such as are found in Doric and other orders of architecture. The corners, top stones or capitals, are carved with the marine scroll or animal, as on the palace doorways. The building stands parallel with the others in the centre of a large square, some 300 yards across, the ground rising slightly on all sides towards it. It does not appear to have contained any covered portion, although there are indications of what might prove to be a subterranean entrance on the east side. Neither here nor in any other portion of the ruins have there been any attempts at excavation, notwithstanding that, as this was one of the seats of the Inca, it is very possible that treasure lies buried. Some gold objects, I am informed, of exceedingly fine workmanship have been accidentally discovered in times gone by; and I should consider it probable that search and excavation might be repaid, for it is well known that the Incas always possessed quantities of gold, much of which was buried on the advent of the Spaniards.

The portion of the city separated from that upon the plain — or possibly at one time the intervening space also contained dwellings—is, as previously stated, situated upon some limestone hills to the west, and overlooking the fortress and castle. These hills, it may be noted, are of very marked vertical stratification, and large quantities of limestone blocks have been removed, doubtless to build the city below.

This portion of this curious ruined city consists of a series of streets, if they may be so termed, or rows of houses where the street or passage was upon the upper side of each row. Some of the houses are circular and some distance apart—those of the lower rows. Next above comes a row of circular houses only about 2 metres apart; still higher, square single houses, followed by several rows of square double houses. They

RUINS OF HUANUCO VIEJO: THE INCA BATHS.
Sketched on the spot by the Author.

are all about the same size — 7 metres in diameter, or across the square. The walls are built of unsquared blocks of stone; the circular houses are true circles; the square with quoins at the angles, and with lintels roughly shaped over doors and windows. The stones are bedded in earth or mortar, all placed with care, and the interstices filled with angular fragments of stone driven in. The walls are about 60 centimetres in thickness. A small door on the upper side, about 50 centimetres square only, gives access, and a small window on the lower, light. Undoubtedly, security against attack or intrusion was the dominant note of their construction.

I rode along these "streets" on mule-back, but time did not permit me to count the number of dwellings, of which there must be several thousands, as the rows continue for possibly a kilometre or more, around the hill to the south. There they stand, mute witnesses to a large population, which lived and moved and had its being in centuries past, and whose vestiges are now but—

> "Blown about the desert-dust;
> Or sealed within the iron hills!"

Traversing the city is the "Inca Road." I followed this road for a short distance, and, in fact, portions of it still form the means of descent from the plain to the river Vizcarra, an arm of the Marañon. It passes down a steep ravine, and is formed of circular steps of unhewn stones. This descends to the river, near the town of Aguamiro or La Union, a distance of a few leagues, and passes the river Vizcarra by a bridge, only a portion of the original abutments of which remain. To the east of the ruins runs the river Marañon proper, beyond the hills shown in the sketch of the baths; and the Inca road continues to the river, crossing it at its junction with Lake Lauricocha—the principal source of the Marañon —by a well-preserved Inca bridge formed of slabs of stone.

Time would not permit me to dispose of more than one day and a half upon the ruins, which are worthy of more study than I was able to give. Possibly I may

have committed some errors in description; for example, what is generally termed the "fortress" may really have been the "Temple of the Sun," for such is said to have existed in the city. I was obliged to push on to the south, to reach a point some 5 leagues away, and evening was falling when I gave the order to strike the tent and load the mules.

Very picturesque and impressive was the place as the long shadows fell across the tableland; the sun's disc nearing the horizon upon the hills, which crown an arm of the Marañon. The clouds, a scarlet curtain of texture rare and filmy, strove as if to hide his exit; and from below, rather than from above, appeared the shades of evening. Already far away appeared like dark spots upon the plain the forms of my mules, the cries of the impatient *arrieros* lost in the distance, and the only living beings upon the spot were myself and the mule I bestrode. Some attraction of contemplation, born of the influence of the dying day, held me momentarily to the place—contemplation of those old sad vestiges of a perished civilisation, for the ruined handiwork of his kind is ever fraught with serious cogitation to thinking man. That strange old monarchy, that industrious race, before whose habitations I stand! They are gone. What part have they played in the scheme of a world: they whose only vestiges are these stones?

The light faded from the western sky, save that pearly tint of momentary beauty following the after-glow; and a single star, dominant of the horizon, gleamed like a pale jewel against the vault of heaven, whilst the purple haze below which slowly grew to being, brought silence, night, and solitude. The breeze whispered among the deserted halls of the Inca; the wild oats growing above the entablature swayed softly, as if they murmured: "As a flower of the field so he flourishes: for the wind passes over it and it is gone, and the place thereof shall know it no more!"

CHAPTER XXIII

THE INCA ROADS

THE Empire of the Incas, which was governed from Cuzco—its Capital—required that means of communication should be established between its extremities; and the roads which united it to Quito, about 500 leagues to the north-west, were the principal arteries of travel.

There is no doubt that there roads existed, but it is equally certain that their importance, as regards construction from an engineering point of view, has been much exaggerated. I should be sorry to dispute their past importance, or to dissipate pleasing theories and illusions, but I cannot help thinking that the descriptions of these roads have often been made by writers who have not seen them, and who have given rein to their imagination to a large extent. Some writers do not hesitate to say that the works are of "such importance and magnitude as could hardly be accomplished by the engineer of to-day," or words to that effect. They describe long and ponderous bridges over rivers, vast open cuttings through rock, and enormous extensions of paving with blocks of stone. Where are the ruins of these works? I will translate from Zapata again. He says:

"Among the most memorable things, and those which almost exceed the strength and cunning of man, are two roads which, until to-day, are found in our Peru, disclosing at certain distances the relics of their grandeur. One is found near the coast upon the llanos (plains); the other passes the regions of the interior, or sierras. These were the work of the great Huayna Capac, the twelfth Inca of Peru. He made subject all the provinces between Cuzco and Quito; and as the summits of the hills and

the difficult passes had caused more trouble than the tribes he had overcome, he desired that they also should be monuments to his victories. To accomplish this he levelled mountains, opened the Cordilleran precipices, diverted rivers, filled up valleys, and overcame all obstacles that might offer difficulty in the advance. This he accomplished for a distance of 500 leagues—some say 700—in the term of a few years, and returned to Cuzco, adding a fresh laurel to his conquests in the invention of these roads."

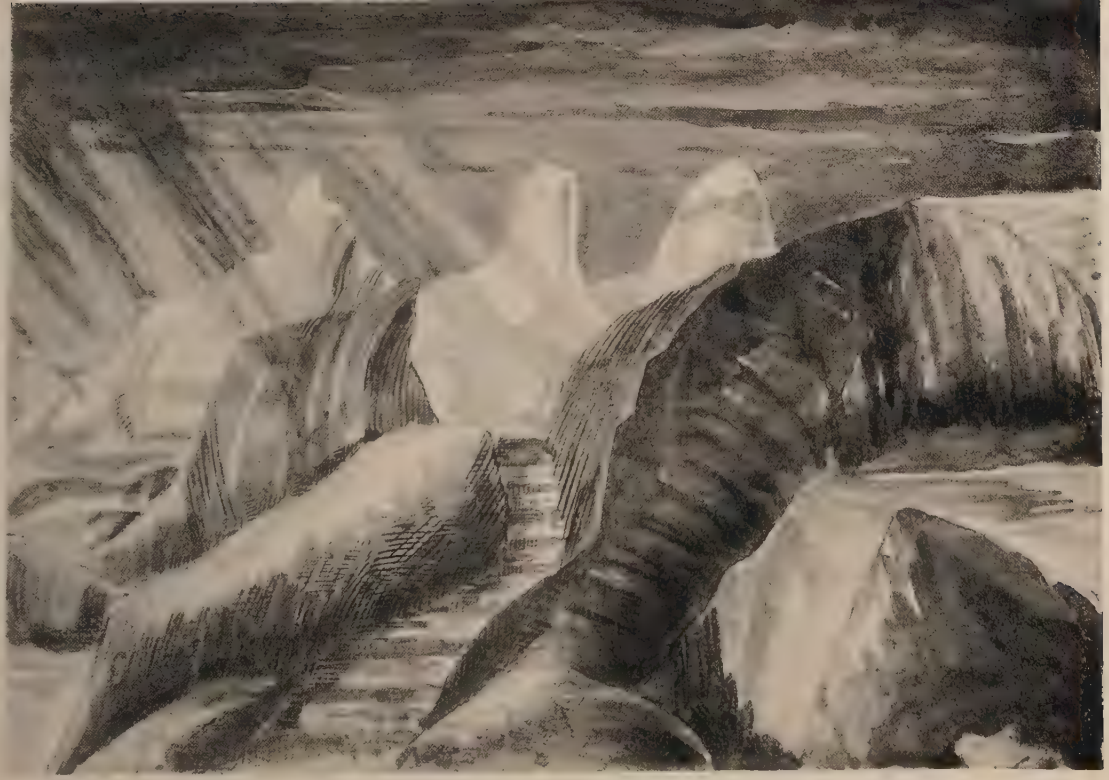
Zapata then quotes from Pinelo, who says as to this work: "With good reason it may be affirmed that it was a marvel of the orb, worthy of eternal memory," adding that it was all done in order that the Inca might pass over the road a single time.

"On the highest summits," continues Zapata, "cutting off the cones for this purpose, he formed plazas for observation, to which ascent was gained by stone steps. These were the lodging-places of the Inca, and he was able to amuse himself in watching the defiling of the numerous armies which followed him, and the hills, valleys, and rivers which spread before his view.

"A few years afterwards Huayna-Capac determined to visit the kingdom of Quito, and not desiring to pass over the same road, he ordered another to be made upon the coast plains. This was equally long, 40 feet wide, and bounded by walls and palisades. It ran through woods for great parts; and in those places where the sand prevented the erection of walls, stakes were driven in to show the direction. Also at certain distances large buildings called *tambos* were erected. These were houses which offered the most comfortable accommodation, and some of them were as rich as the palaces of Cuzco."

Zapata then quotes from a writer—Gautier—as follows:

"Leaving the Romans to Europe, Asia, and Africa, which are the parts of the world where they have extended their empire, and passing to America, we find there two roads which a sovereign of that country ordered to be made. These roads are in Peru; they are 500 leagues long, and go from Cuzco to Quito. They were formerly planted with trees, and defended at their sides by strong



SUMMIT OF THE ANDES: AN INCA PASS.
Sketched on the spot by the Author.

walls and masonry, and along their whole extension ran open conduits. They were 25 paces wide, paved wherever necessary with stones so prodigious as at no time were equalled by the Romans. The stones of which they were formed were ordinarily 10 feet square. All along these were beautiful castles at distances of a day's journey apart, and which had been built expressly for the comfort of travellers."

Zapata does not say if the above writer saw these matters himself, or whether he is only copying from the older Spanish chroniclers. The probable truth of the matter is that these roads were of much less elaborate construction than has been pictured. Those portions which I have seen were certainly not worthy of the descriptions lavished upon them. In the first place, the methods of travel and conveyance known to the Incas did not call for elaborate structures in these roads, nor uniformity of grade, level, and alignment. It is to be recollected that the inhabitants of the country in pre-hispanic times possessed no four-footed beasts of burden—except the llama; no horses, mules or oxen, and consequently no wheeled vehicles. Everything was packed on men's backs or the backs of llamas, and the Indian ever prefers to scale a height and so travel in a direct line rather than to deviate from his way by following a curving contour of easier grade. Consequently their roads were more or less straight, and steep ascents were overcome by steps formed of slabs of stone, rough from the quarries. I have followed long stretches of track which have been defined simply by lines of stones or large pebbles placed at both sides, especially over sandy areas; but this called for no particular skill. Their roads often were obliged to follow along steep mountain-slopes, and there they were terraced on the lower sides with rough slabs and small blocks of stone built up as retaining walls, and put together with some skill, but not calling for any particular comment. Indeed, these walls and ways are found on the slopes of every river-valley, and often in such situations as are now quite inaccessible. The Indians of that period always seemed to prefer to

journey along the precipitous hillsides in this way, rather than to follow the easier floor of the valley. Possibly the rainfall was heavier at that epoch, and valleys more subject to floods, although it was probably motived from measures of protection from enemies. Their roads, therefore, like their lands — the *andenes* — and their habitations, were always built in the most difficult and inaccessible place the neighbourhood afforded.

There was, then, no necessity for great and levelled roads, nor for paving them with vast blocks of stone, except where they crossed the swamps of the *punas;* and here there were used, and indeed are still used, large slabs of stone, or *lozas*, taken from the nearest stratified hill. As for the cutting-off of the cones of hills to make *plazas*, or places of observation, this was undoubtedly done to a large extent; and I have examined many such, although they do not form works of any but a simple nature generally. These flat places were also used for dances and sacrifices, and are, indeed, still so used in some parts of the country for the former purpose. Also they were, and are, used for the winnowing of chaff from grain. The women, in order to perform this, carry the uncleaned grain up in their blankets and *ponchos*, and by repeated lifting up and letting fall of handfuls of it, the strong breeze ever blowing in such places carries away the chaff.

Bridges they built, which displayed considerable skill, but which were, of course, inferior to the most commonplace of modern engineering structures of a like nature. They built stone bridges, employing single long slabs to span from pier to pier, some of which were of considerable length. I have described one of this nature in the chapter upon the Castle of Chavin, where the slabs were 12 to 15 feet in length. Suspension bridges of woven grass ropes were built over chasms of considerable width.

One of these two famous roads—that of the interior—undoubtedly followed for a part of its course the portion of the Marañon near its source, which I have elsewhere described. Thence, it doubtless continued along that river, or nearly, to Cajamarca, which itself is situated in

Part of the Castle of Chavin.

the valley of the Marañon, far to the north. Some of the stopping-places or *tambos* were those ruins also described, and included Chavin, and Huanuco Viejo. These were very extensive places, as evidenced by the large area which the existing ruins cover. Most of the other *tambos* were probably of less elaborate description, and the character of their construction will be seen from the chapter on the Upper Marañon, which describes some of the numerous ruins of castles and habitations which I passed.

On the coast road numerous ruins also exist, some of which I have described. Most of these were of adobe, or sun-dried, earthen bricks, and far less lasting and important than those of the highlands.

I may here remark that whatever may or may not have been the exact condition of these roads and stopping-places they certainly embodied great convenience for travellers of that time. Would that equal facilities existed now, for the traveller in these regions to-day finds but little care or comfort, and absolutely none which is consequent upon any action of the Government, who make little endeavour to foster means of travel in the interior. It is often the case that the local authorities fail entirely to perform the simplest duties of road-mending and maintenance; and, indeed, the funds destined for this purpose are too often misappropriated. Here, then, are the methods and results born of a developing democracy contrasted with those of an ancient autocracy.

A favourite type of small bridge which was used in pre-Columbian times, and which, in fact, is still built in country places, might be described as a species of cantilever, in principle. A point is selected in the stream to be crossed, where two rocks, one on each side, approach to form the nearest possible abutments. Upon these is placed rude masonry of unworked stones to bring the abutments to a flat surface, and stout poles are laid thereon, projecting a few feet over the stream, on each side. Upon these is laid a layer of poles, crosswise, tied with strips of hide or dried-grass ropes. A further layer

of poles is now placed, projecting still further over the stream, and the shore ends of both the first and third layer are weighted with stones and road material, when another layer of transverse poles is laid in place. The span has now been considerably decreased, and the "girders," or long poles, are laid across, so spanning the stream. The whole platform is now covered with thinner poles, brush, and twigs, and a layer of earth over all, and the structure is complete. The bridge over the Marañon at Chuquibamba is typical of this method of construction; and, in fact, all over the country I have had occasion to cross such bridges, often in fear that my horse's hoofs would penetrate the light material and plunge me into the stream; often prudently alighting at any signs of nervousness on the animal's part.

These bridge builders appear to have had no knowledge of the principle of the trussed girder; nothing of this nature seems to have been evolved, notwithstanding that long sticks of timber are rarely obtainable in the regions of the coast and Cordillera, and it might have been supposed that some form of splicing might have been evolved. Even to-day the authorities of interior towns form bridges simply by building up masonry abutments and laying trunks of the eucalyptus upon them for the roadway—the largest timber obtainable. I was invited to attend the ceremony of opening a bridge of this nature, of considerable span; and, seeing the dangerous bending of the poles in the centre, I showed the native carpenter there how to make an ordinary "Howe" truss with the same material and a few iron bars and bolts. This was looked upon as a remarkable piece of work.

As regards the arch the Quechuas and Aymaras were, there is no doubt, unacquainted with its principle and use, although it is stated to have been known to the Chimus, a people of Peru of the region of Trujillo, who spoke a different language to the first-mentioned. The nearest approach to anything embodying the principle of the arch that I have seen is in the Indian houses

between Lakes Arapa and Titicaca, described in another chapter. But these are really domes, not arches, although a vertical section of a dome may be conceived to be a kind of arch, sustaining its own weight, wind-pressure, etc.; whilst a horizontal section might be looked upon as a species of horizontal arch, such as embodied in the principle of the modern stone dam with a curving water-face, as used for reservoirs.

Writing of the Inca bridges, Zapata says:

"They are, then, bridges of *mimbres*, which in Peru are called *juncos*, which grow very long and flexible, and resist time, water, and their effects. They wove plaits of these, which they multiplied until they equalled the weight of a man. With five of these, which they fastened to both sides of the rivers, they formed bridges, seeking for their securing the hardest rocks; and in the case of not finding such, they built blocks of stone and lime, not less firm than the natural rocks. Of the five plaits or cables three form the roadway, and sticks of wood about 20 inches thick, and of the width of the bridge, which generally is 2 yards, were placed between. This is then covered with a weaving of dry branches, which form the floor. The other two cables are placed at the sides, and serve as handrails, raised about the height of the body of a man, on foot. These bridges are so strong that they sustain beasts of burden loaded with packs. The entrance is made descending, and the exit by ascending, aided by the considerable sag, caused, in addition, by the bridge's weight. And although the cables are well stretched, the structure, being in the air, swings from one side to the other with the least movement of the passenger. The Indians are so expert that they pass beasts of burden over, galloping; and many of them, without dismounting, gallop over at full speed, to the surprise of the Spaniards, who feared to make the transit of these machines.

"One of the most famous of these bridges is that over the Apurimac river. Its length is 200 paces, and it is fastened to a rock on one side, and to a strong wall on the other. It was built by Maita Capac, and exists until to-day, the cables being kept in repair. And another was also built by him over the Desaguadero, which drains Lake Titicaca, of woven dried grass, the same material of which the Indians form their rafts on this great lake. This was 150 paces long and 14 feet wide, and the cables were renewed every six months."

The Indians did not only use this kind of bridge, says Zapata; and he describes another method of passing rivers in situations which did not permit of the construction of the suspension bridges described. Strong beams or tree-trunks were driven into the banks, and between these was stretched a woven cable. Upon this worked a strong wooden ring, known in Quechua as *Oroya*; and hanging therefrom was a basket, or car, and the passenger hauled himself from one side to the other by means of a cord. The Spaniards were quite unable to improve upon these bridges, when they came. Two great aqueducts were built by the Incas, according to Zapata, who quotes Garcilasso and Pinelo; one of 150 leagues long and 12 feet deep, made around deep valleys, and cut in rocky slopes without the use of iron tools. These were for irrigation purposes, and there is no doubt that in this science the Indians of that period were adept.

The Incas used the thermal springs which abound in the Cordillera, for baths and curative purposes, and these are still employed by the present inhabitants of the country.

The Incas and Aymaras, then, possessed primitive engineering knowledge of no mean order. Their buildings were well adapted for regions subject to earthquakes, as the Andes are, for their walls are strong and heavy. The buildings are, with rare exception, of one storey, and the roofs were probably of poles and thatch. They cut, carved, and erected great monoliths; they adjusted stone blocks with the greatest nicety; they excavated and embanked in rock and earth; they fashioned stone and copper tools; they smelted ores; built roads and aqueducts, and irrigation works; and made astronomical observations. All of these matters are of intense interest; they show a considerable advance on that road towards intellect and knowledge whose starting-point is barbarism, and along which it is the innate attribute and inevitable tendency of man to press, in whatever climate or hemisphere, towards his destiny and his millenium goal!

CHAPTER XXIV

THE INCA CIVILISATION IN THE AMAZONIAN FORESTS

It is a debated point as to whether the Inca civilisation and influence extended beyond the uplands of the Andes eastwardly to the Amazonian region of forests, or "Montaña." It has been stated that such was not the case; but recent investigations by some of the Peruvian Government engineers and employees, as well as by foreign travellers in the country, demonstrate that evidences of Inca influence, and the remains of their handiwork, are encountered in those regions.

Among these evidences are my own observations, and I have examined various remains of Inca works in the upper part of the Montaña. The works at the Aporoma gold mines, and the roads leading thereto, which I have elsewhere described, have been made, there can be no doubt, partly in pre-hispanic days. There is also no doubt that the Spaniards made use of the Inca roads and mines, transforming the former into mule roads; and the trail to Aporoma and other similar trails in that region are of that type, consisting of steps made of *lozas*, or flat slabs of unhewn stone, evidently formed for traffic by foot-passengers rather than for beasts of burden.

The great gold mines of these regions, some of which I have described elsewhere, were undoubtedly one of the most important sources of Inca wealth and treasure in gold; especially those of Aporoma, San Juan del Oro, and San Gaban, with the other numerous alluvial deposits in that region.

As I have explained in the chapter upon my expedition to the Aporoma mines, the name Azangaro is the

corruption of a Quechua word, meaning, "the farthest away": supposedly the farthest north-easterly boundary of the territory dominated by the Incas. But the mines above-mentioned are much to the north-east of the Cordillera of Azangaro, and the name was probably meant to indicate the furthest main Andean range, for this Cordillera of Azangaro, and Anannea forms the main summit of the Andes, and the *divortia aquarum* of the Continent, as shown on the accompanying route-map of my journey. An account, published by Señor Rosell, in Lima, in 1899, says:

"In the interior of the Montaña there did not exist any (Inca) towns or villages of importance, but it is evident that the country was inhabited, and subject to the Inca government of Cuzco. Undoubtedly, they worked gold mines according to the method of that time, and on account of the Inca Government; and this may be taken as proved by the fact that hardly was the conquest of Peru realised by the Spaniards, when we learn that one of the Pizarros was the owner of the San Juan del Oro mine, directing the works and extracting tremendous profits. This can only be explained by taking it for granted that the Spaniards found the mines in working order on their arrival. Pizarro and his companions, being informed of these riches, were enabled to adventure on known lands, and not forced to proceed to discover any unknown country, but to direct themselves to one of the best possessions of the Inca, and seize it, dispossessing the primitive owners."

The Pizarros undoubtedly made a rich haul in these mines, and I am tempted to reflect in passing that their methods were even more successful than those sometimes employed by the modern "Pizarros" of European or North American capitals—the company promoters and stock gamblers—who at times are enabled to annex large interests in mines without leaving their office desks! But, pardon, patient reader, I digress! let us return to our Incas.

Cieza de Leon, the Spanish historian, who wrote in 1553, hardly eighteen years after the founding of Lima, speaks of these mines of Carabaya as having produced

1,700,000 Spanish dollars in gold; and Garcilazo de la Vega, the historian of the Conquest, also describes them, showing that they had existed in pre-hispanic days, and that the colossal works, some of which I have mentioned (as in Aporoma), were found in existence by the Spaniards, and made use of by them.

Hydraulic gold mining in these regions, such as I have seen performed by the Indians, and have described, is an indigenous industry, and must have been evolved by reason of its natural environment long before the advent of a white race. Indeed, the Spaniards learnt from the Indians, rather than having taught them in this respect. Of course, these mines are not situated in the dense tropical forest of the true Montaña, but in the lower foot-hills and valleys of the Andes. Nevertheless, this is the upper edge of the Montaña, and in some cases at as low an elevation above sea-level as 5,000 feet.

In the chapter treating of the Montaña and the Indians of the Amazonian region, it has been shown that there was considerable connection with the Incas by those tribes. In the Archives of the Government dealing with the Department of Loreto, published in 1905—which volume was officially presented to me—appears an interesting report by one of the Engineers of the Government — Von Hassel — upon his investigation in the Montaña, made by order of the Departmental officials, in February, 1905, and which I have quoted at some length in the chapter upon the "Montaña." The report gives the result of some ten years' observation, and I will here translate some extracts dealing with the indications of Inca influence in the Montaña. It says:

"The principal monuments of the Inca epoch in the Montaña are the following: — Inca roads from Paucartambo to the Madre de Dios river; Inca road from Cuzco to the head-waters of the Manu; *andenes* in the valley of the Yavero; Inca road in the valley of the Urubamba river in the direction of Tonquini;

andenes and other indications in the valley of Timpia, with the chisellings of the Sun and Moon on a rock near Pangoa; Inca roads to the right and left of the Marañon (lower); remains of buildings which contained copper hatchets in Cumari on the Ucayali river; the ruins of Vilcabamba in Intipampa, river Picha."

It seems to be the case, therefore, that the Incas exercised some considerable influence over these lower regions, and the point is an important one. Whether they included them in their dominions or not is doubtful. It is hardly to be expected that they would have lived there, the conditions of climate, temperature, topography, vegetation and every other natural characteristic being so totally different to those of the highlands where they had evolved and lived. Even to-day, as I have shown elsewhere, the Cholo, or even the mestizo of mixed Spanish and Quechua blood of the highlands, or Sierra, dislikes to descend to the warmer regions of the Montaña, or even of the Coast. For him they are enervating and malarious, after the tonic air of the plateaux. Yet all this must be considered in the light of the accounts which follow, and of recent investigations and discoveries in the Montaña.

The keen, cold regions of the Andean plateaux seem to have been conducive to this isolated civilisation of the Incas. The harder conditions of the "struggle for life" encountered there, seem — as ever — to have been more conducive to arousing and nurturing the spark of intellect than the degenerative environment of the profuse tropical regions of the Amazonian forests and plains. Just as the colder regions of the north of Europe produced a thinking and an acting race—the highest civilisation of the world, of Britain and kindred countries—so the Andean plateau, whose topographical altitude of elevation rendered it in a sense equivalent to altitude of latitude, produced a thinking and acting civilisation on its continent. Nowhere can a more notable example be found of the effect of topographical and climatic environment upon man than in the comparison of the autochthonous race—if such it were—of

the Andes, with those of the Amazonian forests. The Incas, indeed, developed some points of government and social economy superior to those existing now in the hispanic civilisation of Peru, imported from Europe, and which has principally taken route in the rather enervating environment of the Pacific coast, as Lima. Possibly if the people of Lima were to move their city up to this plateau of the Andes they would acquire a more vigorous and energetic character. Certain it is that they would lose their pallor and love of ease, and acquire the ruddy glow and spirit of activity of the highlander. I commend the idea to them! Truly, whether as individuals or as races, the hardships we are forced to endure furnish that "'fining in the crucible" which is the process and method of advancement.

In the *Journal* of the Royal Geographical Society for August, 1905, appears an interesting paper (Baron Nordenskold), the result of journeys made in 1904 and the beginning of 1905, and dealing with the Inca civilisation, especially with regard to its possible former existence in the Montaña. He says:

"This is, in brief, what I have discovered in the fell valleys east of the Andes, bearing any close connection with the civilisation of the Andean fells—more especially with the builders of the *Chulpas* (sepulchral grottoes), who were probably the ancestors of the Aymaras."

He continues, and the paragraph is printed in italics:

"As we have ascertained, the remains of this civilisation is not met with farther east than the verge of the primeval or dense tropical forests, with the sole exception of the valleys of the fell, which afford to man about the same conditions of life as the lower parts of the Bolivian-Peruvian elevated plateau round Lake Titicaca."

He also says:

"Further east, towards the interior of the primeval forests, 1,960 to 2,300 feet above sea-level, I found large dwelling-places. They prove that the now uninhabited primeval forests formerly had a numerous population. These things were absolutely unlike anything discovered

in the fell valleys, and are derived from a population that has evidently occupied a higher status than the savages at present living in the primeval forests at Rio Madidi, Rio Tambopata, and Rio Inambari. Thus, in the primeval forests large grinding-stones are found, and masses of fragments of pottery, furnished with totally different ornaments from those seen on the pottery from the Chulpas."

Another passage says:

"In the primeval forests east of Cuzco the Indians of the fell have not spread. Their territory did not extend further than 60 miles east of their capital—Cuzco—and yet they or their cultural influence predominated from Argentina to Equador."

The account also speaks of a great stone which serves as a bridge over the stream of Sina, also "several stones there, ornamented with serpents, while one is adorned with a fish." Sina is not far from Poto, in the region I have described from my own visit in another chapter.

Another extract is:

"It would also be of importance to learn in what degree these Indians of the primeval forests have possessed any independent civilisation, or how far they have been influenced by that of the fell. In Chaco (Argentina) I found shells from the Pacific Ocean (Oliva Peruana) in a grave, which proves that communication for purposes of barter existed from the shores of the ocean to the dense tropical forests of Chaco."

Commenting upon the above extracts, from the point of view of my own experience, it seems to me that they point strongly to Inca influence in, and possibly occupation at, some period of the Montaña. The grinding-stone may very possibly be akin—according to its photo—to the *kimbaletes*, or grinding-stones, which are found in hundreds throughout Peru in proximity to the gold mines of the Cordillera and the Coast, and which may have been a native invention, used in pre-hispanic as well as in post-hispanic days, by the Indians for grinding up gold quartz. In this connection, however, it is to be recollected that the Indians were not acquainted, in all probability, with the

GOLD AND OTHER OBJECTS FROM SUBTERRANEAN INCA TEMPLE: HUARAZ.

use of quicksilver in this industry, which might cast a doubt upon their use of the *kimbalete.*

As to the sea-shells described above, it is probable that they were not used only as a medium of barter, but that they had a religious meaning; and in this connection I may draw attention to the shells found near Huaraz, of which I give an illustration. The adornment or carving spoken of at Sinca, of a fish, is also significant, recollecting that the religion and origin of the Incas seems to have been connected with some marine event or matter. It is here interesting to compare all this with the chapter dealing with the Inca civilisation, and the statement contained therein, by Dr Patron regarding Huirakocha, as well as the description of the megalithic remains and their origin on Easter Island. Also the carvings which I have described and illustrated of Huanuco Viejo, which may possibly be meant to represent some marine animal; and the stone taken from Chavin, for might not the scrolls and carvings on this stone be considered to represent fishes' or serpents' heads, and waves, alternately? At any rate, the idea presents itself to my mind.

Taking all these matters into consideration we see that the marine emblems of the Incas might reasonably be supposed to have been introduced into the Montaña; and it is a point which must be insisted upon that the knowledge of these tropical forests which we have is certainly not yet sufficient to enable us to state that no ruins of true Inca buildings exist there. There might be whole ancient cities buried in the vegetation, still undiscovered: such as no explorer could expect to find in a few months' travel in a region covering so vast an area.

I may comment slightly upon the remarks in the account of Baron Nordenskold, that:

"East of the Cordillera real, in the higher valleys of the fell, the possibilities of human subsistence are about the same as on the plateau," and . . . "the valleys of the fell, which afford to man about the same conditions of life as the lower parts of the Bolivian-Peruvian elevated plateau around Lake Titicaca."

It must be recollected that on the eastern slopes of the Andes there is no large plateau answering to the elevation of that of the Titicaca basin or tableland; and the conditions of human life vary a good deal there and differ from Titicaca, merging soon into much milder climates; whilst at a corresponding altitude to Titicaca on those slopes, alfalfa and other fodder may be grown. The Titicaca lake-basin and plateau of Peru and Bolivia forms a peculiar region, in many respects. It is a hydrographic entity, there being no outlet to any ocean from the system constituted by the various lakes — as Titicaca, Arapa, Poopo (or Aullagas), etc., and the Desaguadero river. It is a high, bleak region, more than 12,500 feet above the level of the sea. It produced the Inca civilisation—Titicaca was its cradle. It also produced the alpaca and the llama—the latter the hoofed ruminating quadruped, the small and humpless camel of the Andes, which is such a factor in the life of the Peruvian Indian, and which is found nowhere outside of this plateau except in comparatively near-by regions where it has been propagated for its useful qualities. Titicaca appears to be, also, the only tin-bearing region of South America, principally in Bolivian territory.

Taking into consideration all the available information on the subject of the existence of a civilisation in the Montaña it seems evident that any such that existed or any remnants that still exist, have been connected with the Titicaca centre—that is, of the Incas. In the Report to the Peruvian Government, from which I have before translated, by Von Hassel, made in February, 1905, is the following:

"Among certain tribes, the contact that existed with the Inca Empire is apparent, as, for instance, the Machigangas, Campas, Piros, Conibos, Shipibos, Shetibos, Aguarunas, and Orejones. This evidence of contact or influence may be divided into three classes: first, the tribes which were conquered peoples paying tribute to the great empire (Inca); second, those that were emigrants from the great empire in post-hispanic days, or after the Spanish

Photo] GROUP OF LLAMAS AT RAILWAY STATION. [*N. P. Edwards.*

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invasion; third, those that were subjects of the great empire, but remained in the Montaña after their conquest. The first three tribes named belong to the first category; to the second the Machiganga of the Yavero and Urubamba rivers, and the others to the third.

"In the neighbourhood of Cumaria and Cipria, on the Upper Ucayali, there are found buried various copper hatchets similar to those used by the Inca warriors. In the neighbourhood of Pangoa (as before mentioned) there is a chiselled rock with an image of the Sun and the Moon. On celebrating their feasts the Campas Indians paint these images with the same colours which they use for their faces.

"All the historians of Peru speak, in their narratives, of a mysterious country—the great Paititi, citing various Inca and Spanish expeditions which have sought this marvellous land. The present generation places these narratives among the legends in which the history of Peru is rich, for from first to last no trace of Paititi has been discovered, notwithstanding the incalculable value which such might have given of a contact with the Inca Empire. In one of my expeditions on the Amazon I visited the great island of Tumpinambaranas, where great ruins show a civilisation like that of the Incas. The ties that the inhabitants of this island had with the Sierra (the uplands of the Andes) is worthy of serious study, which might possibly throw light, not only upon the great Paititi, but even upon the origin of the first Inca, Manco-Capac. The existence and antiquity of this matter being proved, the supposition might be made that Manco-Capac was an emigrant from this island, and that he founded his habitation in the island of Lake Titicaca, afterwards."

The island of Tumpinambaranas is formed by an arm of the Madera river with the Amazon, and is 210 miles long, with an area of 950 square miles. Whilst I give these opinions for what they may be valued at, they show how much there still remains to discover and investigate regarding the Inca civilisation, and how unwise it is to form a conclusive judgment yet. Here are these ruins on the Amazon, in the very heart of South America, on this fluvial island of the Amazon, nearly 2,000 miles away from Lake Titicaca, the centre of the Inca civilisation. Have they any connection there-

with? The writer previously quoted says, and his views are the result of much observation:

"A study of these tribes conduces to the theory that the invasion of the pampas or plains of the Amazon, after they were transformed from a sea into a habitable region for human beings, receives its first impulse from the slopes of the Brazilian Cordillera (Serra), and of the Cordilleras of Peru, Equador, and Colombia. In subsequent epochs there existed various civilisations which have disappeared, the most modern among them being that of the Incas in Serra Tumpinambaranas, and the great Chaco, which had influence in the development of these tribes, there existing fragments of these civilisations among them, although they are at present delivered over to savagery."

Chaco is mentioned in the account previously quoted of Baron Nordenskold, who says:

"On my former travels in Chaco, in Argentina, I also found large dwelling-places in the primeval forests beyond the real Calchaqui territory, in districts at present very sparsely inhabited. It would be very interesting to institute researches with a view of ascertaining whether very large ranges east of the Andes, at present inhabited by more or less wandering tribes, were not formerly occupied by a settled population of far higher standing than that now dwelling there."

Then follows the passage I have previously quoted in this chapter, regarding the Peruvian Pacific coast sea-shells found at Chaco.

And here I may close this chapter and subject with a summary of the ideas expressed regarding the origin of the Incas, and a comment thereon as proposed in the chapter on the Inca civilisation. It is by no means uncommon among the Peruvians of the "Sierra" or uplands to hear expressed the belief that the Incas and the Cholos might have had a Mongolian—Japanese or Chinese—origin, as indeed one theory of this origin sets forth, of a stranded Chinese vessel on the Peruvian coast in the reign of Kubla Khan. Is there any actual resemblance between the present indigenous inhabitants of Peru and a Mongolian race. I must admit that I have often observed an appear-

ance in the form of the eye which gave such a resemblance. There is also the queue, or pigtail, customary among the Quechua and Aymara Cholos of the uplands; and lastly, an abundance of names of places which seem to have, when properly pronounced, a Chinese sound. Examples of these are "Puntou," and "Punchao"[1]—villages on the Upper Marañon; also "Tonquini" in the Montaña, and many others of which I have lost my notes. It is remarkable also how easily the Chinamen immigrants assimilate with the Cholos, as if they were kin in some way. But these reflections I only give for what they are worth.

As to the marine emblems of the Incas, this furnishes a strong "clue" whereby to follow their origin, which some writers aver may yet be traceable through Easter Island, New Zealand, and to Asia. Again, so far east as the Amazonian island before described in Brazil, and in places in Argentina, are evidences which may be threads for investigation, and the question naturally occurs—if from the Amazon, which is navigable from the Atlantic, why not Europe? And so forth.

There lies, then, this fascinating field for archæological investigation. The indications which point the way seem to have been few, but they may be more plentiful than has been supposed heretofore. They are largely written in stone, and stamped in memory and tradition, but it is a fortunate condition of ethnological research that the farther, in time, that we recede from the events of history, the clearer our vision becomes, and the more trustworthy are the links which complete the chain of evidence.

[1] This is also a Quechua word meaning "sun" and "eye."

CHAPTER XXV

THE MONTAÑA AND THE AMAZON

THE Montaña! What a perspective this single word opens up to the mind of the traveller who understands its signification! What a charm, what awe it conveys; shrouded in mystery, adventure, silence, romance—the attributes of the limitless in Nature when sentient man enters!

The word conjures up to my vision those illimitable valleys of forest-seas; I can almost hear the patter of raindrops on leaves; can almost smell the odour of foliage, and see the mist-billows which roll onward and upward before the rising sun to break and fade against the summits of the Cordillera. I can feel the hunger, again, of forced marches on short rations; the fatigue of long leagues passed over; the exhilaration of the morning air as with elastic step I trod those solitudes; and the repose of sunset camps far in the heart of those strange regions. Again I stand upon some eminence and with shading hand survey those endless *bosques* traversed by endless rivers and scarcely-perceptible trails, before plunging into the leafy depths; and again I feel the rapture which the true lover of Nature experiences when alone with her in her solitudes.

What is the Montaña? The word does not itself convey its meaning. The Montaña of South America—that is, of Peru, Bolivia, Ecuador, Colombia, Brazil—is not the region of the mountains, but the region of the forests. By the Montaña is meant that vast territory to the east of the Andes, beginning at the line of vegetation upon their eastern slopes and base, extending throughout all that enormous region of rivers and forests upon the great affluents of the Amazon—the Marañon, Huallaga,

THE EDGE OF THE MONTAÑA.
From sketch made by the Author.

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Ucayali, Madre de Dios, and others—and thence right into the heart of Brazil, and up to the plains of Argentina.

The Andes are left far behind as you penetrate these forests; they remain only as a memory in your mind; you cannot even see them now; and in this soft, moist climate of the tropical Montaña it seems impossible that you had ever battled with icy gales, crossed everlasting snow-fields, and stopped short for lack of breath and want of oxygen miles above the level of the sea. You are in another world.

The Montaña is a great and palpable matter, to be conquered by intrepid man. The attacks upon it have extended from pre-Columbian days; they have multiplied of late years, and the great region is being explored, traversed, learnt and mapped, although there still remain some portions which have scarcely yet been trodden by the foot of civilised man, and some which are still marked "unexplored."

The conquest of the Montaña is a great and standing matter for the Peruvians. The best part of their territory, perhaps, is contained in these little-known regions, and the more enterprising of their Governments and Prefects are constantly sending out expeditions thereto. A pamphlet recently issued (1905) by the Lima Geographical Society, and presented to me by its author, Señor Ricardo Rosell, a Peruvian who has travelled much in his country, contains in a succinct form the various expeditions from remote times until the present, which have been made to bring the Montaña under the dominion of knowledge and civilisation. I will translate some details from this pamphlet:

"As one of the first centres of the hemisphere, and seat of the power of the Colonial Government, Peru necessarily enjoyed a vast heritage in the distribution of the Amazonian region, with its enormous network of tributary rivers. This heritage, however, is not a gratuitous one; it carries with it the arduous mission of profiting by it. The Peruvian Orient, with its thousands and thousands of square leagues of territory, full of promise and mysteries, offers a conjunction of problems, pregnant with obstacles and

sown with dangers. There Nature reigns as absolute monarch, surrounded by all the barriers of a primitive world. Impenetrable woods, torrential rains such as those of the Deluge; and man, self-styled King of creation, finds himself there but a weak and impotent being, scarcely capable of overcoming the difficulties She opposes to his advance. But the Orient is no longer an unknown problem; for its development Peru has done much: has spent great efforts and vast sums."

The first expedition to the region of which any knowledge exists is given as that of the Inca Sinchi Roca, successor to Manco Capac, in the year 1136, who penetrated to the river Caya-huaya, where gold was found. It is to be recollected that the Inca *régime* did not control these regions, or it is generally so considered. The tribes under their rule stopped at those of the Andean plateau, and did not include the savages of the forests. But I have fully discussed the question of Inca occupation of and influence in the Montaña in a former chapter.

"In 1300 another of the Incas—Inca Roca—charged his son with the conquest of Paucartambo, one of the regions of the Montaña, and in 1450 the Inca Tupac Yupanqui visited the Madre de Dios river. This completes the absolute knowledge of the operations of the Incas in the Montaña.

"In 1500 Vicente Pinzon, a Spaniard, leaving the port of Palos, arrived at the mouth of the Marañon (Amazon) upon the coast of Brazil. This afforded the first notice in Europe of the existence of these great rivers of South America. In 1535 the Inca Manco left Cuzco for the Yucay valley to attack the Spanish Conquistadores and, being defeated, took refuge in the Montaña."

From that date until 1550 some fourteen names of Spaniards are given, who conducted expeditions to the forests, attacked Indians, established towns and settlements, and navigated the rivers.

Then, from 1556 to 1822, during the Colonial period, are given the names of a large number of explorers and travellers, scientists, filibusters, priests, royal emissaries,

engineers, buccaneers, and others, with brief accounts of their exploits in the penetration of virgin forests, navigation of unknown rivers, conquests of Indians, discoveries of mines, establishing of missions, making of surveys and maps, and so forth: nearly three hundred years of striving, sometimes futile, sometimes fruitful, within this remarkable land. What a history they tell of struggle, enterprise, hardship, enthusiasm, faith, wickedness, greed, avarice, love of Nature and of conquest, sacrifice, toil and bravery! Think of what they endured: their setting forth; their hunger, thirst, wounds, fatigue; crowned by the joy of success, or obliterated by the pall of failure. Many of them sleep beneath the forest fastnesses they strove to dominate. All have passed, units of history, dots and dashes on the scroll of Time!

From 1822 to the present day—the Republican period—are given more and numerous lists of explorers, missionaries, merchants, colonisers, and others, who have carried on the work of conquest. The sword, the cross, the stake, the book and cassock, the royal mandate, have been succeeded by the truer implements of civilisation—the axe, the theodolite, the rifle. The roadmaker, the Colonist, and the Engineer have ousted the priest and the filibuster, and now the greed of commerce usurps the greed of conquest.

It is a dangerous thing to venture forth too lightly into the Montaña, or without due preparation. On one occasion I was obliged to make forced marches extending over several days, living upon boiled rice—no other provisions remaining—and to this day rice is unpalatable to me. Had I not done this I might have perished of hunger. During my stay in Arequipa a journey was made into the Montaña of Paucatambo by an ex-Prefect of the Department of Cuzco—Colonel Fernandez—with his son, a young boy. They lost their way, and both perished of hunger and fatigue, as well as several of their attendants. I saw a portion of the diary they kept, and which had been completed by one of their servants. It recorded their struggles day after day to find the

right way: the hunger they endured; the thirst—for, strange as it may seem in so well-watered a region, they suffered from want of water. This was due to the fact that the only possible ways sometimes lie along the ridges; and whilst water can be heard flowing in the valleys below, it is impossible to approach it, due to sheer declivities or impenetrable forest on the verge. At length both father and son succumbed to exhaustion and fatigue, and lay down to die, whilst a few survivors struggled on and reached a settlement.

The feeling which overtakes the traveller who is lost in a forest, at the moment when he realises it, is hardly describable. Some men have been known to become insane, and to lose their power of reflection altogether, dashing onwards like a frightened horse with no idea save that of instant escape. I retain vivid recollections of losing my way in an almost unknown forest, and of experiencing the exceedingly unpleasant sensation of returning to a spot which seemed familiar—why? because I had left it a few hours ago in endeavouring to find the proper way! But the only method under such circumstances is to retain one's calmness, and to follow the indication which due reflection may suggest as advisable. As to walking in a circle, such as seems to happen at times in such situations, there is little difficulty in keeping a course by proper observation of objects before and behind one, supposing no compass to be at hand or heavenly bodies observable. Topographical considerations are often useful: sloping ground means that a rivulet may be encountered soon, and rivulets lead into streams, which fall into rivers, and it is seldom that a path or trail of some description is not encountered near the margin of these.

But it is exceedingly depressing to be lost in a forest. If there is any choice, it is preferable to be lost in the mountains. You can, at least, see where you are going, and ascend points for observation purposes, although the exertion is, naturally, more fatiguing.

The area contained within the Peruvian Montaña occupies two-thirds of the territory of the Republic, and

extends from the frontiers of Ecuador and Colombia in the north to that of Bolivia in the south. Its eastern limit is the Montaña or *selvas* of Brazil, and its western the slopes of the Peruvian Andes, up which it reaches to an elevation—the limit of forest vegetation—of about 11,000 feet. This is equivalent, roughly, to a length of 1,000 miles, with a width varying from 200 to 700 miles. Of this region very little — a mere fraction — is under cultivation, or, indeed, under ownership—except that of the State, and is scarcely traversed in its more remote portions except by the various tribes of Indians, and the india-rubber gatherers on the affluents of the Amazon. Part of it is, in fact, unexplored and unmapped. It consists of (1) land broken up by foot-hills and rolling ground, generally covered with forest; (2) vast open plains covered with grass, such as the Sacramento pampa; and (3) regions of almost impenetrable forest.

The principal rivers which traverse this region are all affluents of the Amazon. The Marañon, Huallaga, Apurimac, Ucayali, and their tributaries are those which feel the topographical influence of the Andes, flowing more or less parallel with the chain (although at vast distances away from it) in a north-westerly direction. The last-named, for example, is something like 200 miles away, eastwardly, from the axis of the Cordillera; yet parallel to it. These four great arteries all fall into and form the Amazon in Peruvian territory, their common course then charging to the north-east, or at right angles to their former direction. The rivers Madre de Dios or Madera, the Purus, the Yurua, and the Yavari, also run north-east or normal to the system of the first four named, and fall into the main Amazonian stream outside Peruvian territory.

Another series of affluents descends from the north-west, flowing south-eastwardly, and fall into the main stream of the Amazon, which is known also at this part of its course as the Marañon. The principal of these are the Morona, Pastasa, Tigre, Napo, Putumayo, and Yapura. All these, with the exception of the two last, join the

common stream in Peruvian territory; but part of the region through which they rise and flow is that under dispute and arbitration between Ecuador and Peru.

The Amazon and its affluents constitute the largest river system in the world. The navigable portions of the whole system are exceedingly extensive, and more than 20,000 miles are in Peruvian territory. This 20,000 miles becomes 10,000 for a portion of the year, in flood times, for steam launches and canoes.

Beginning with the most westerly of these great affluents, the Marañon, nearest the Andes, the furthest navigable point is just below the *Pongo de Manseriche.* The word *pongo* means "rapids," and these remarkable rapids prevent navigation up the Marañon beyond that point, except by means of canoes and rafts. These latter are worthy of special mention, and are spoken of later. The beginning of steam navigation below the rapids, known as Port Melendez, near Borja, and also Port Limon, slightly lower down, is, remarkable as it may seem, only about 225 miles in a direct line from the Pacific coast, straight across the Andes as the crow flies. And here I must speak of the project I have endeavoured to carry out for a railway to unite these points—the Pacific Ocean and the Amazon river—and which will best be described by extracts from the preliminary report I drew up for the purpose, which I have previously quoted, and which I here repeat, as follows:

"A great trans-continental route of travel across South America will be created by the building of a railway, uniting a seaport on the Pacific coast of Peru, with the navigable head-waters of the river Amazon. It is a fact little grasped by Europeans that the vast fluvial ways of the Amazon penetrate right through the great continent of South America up to the foot of the Andes, and that steam navigation for nearly 3,000 miles can be carried on from the Atlantic Ocean to within some 225 miles of the Pacific. The port which it is proposed to make the western terminus of the line is Payta, a fine land-locked harbour in the northern part of Peru. Leaving this port and going eastwardly, the line will traverse the flat coast-zone, and reach the Andes—

ascending which it will cross the summit at an altitude above sea-level of about 6,600 feet, by means of a pass which seems almost to have been made by Nature in order that man might create a way of travel between the world's greatest ocean and largest river, crossing one of the greatest mountain ranges on the globe. Descending thence, the line will run to its eastern terminus where the Marañon forms the mighty Amazon, near a place called Port Limon, and where steam navigation begins: so finishing the line of communication which Nature has made in her vast natural canal, the Amazon—some 3,000 miles of river navigation from the Atlantic coast."

This is an alluring project—one of the great things in railway work yet remaining to be done, giving outlet to the great natural wealth of a virgin continent, and opening up to civilisation those vast and wonderful regions of which Humboldt spoke long ago, and which continue to fire the imagination of all subsequent travellers.

CHAPTER XXVI

THE MONTAÑA AND THE AMAZON—*Continued*

CONTINUING the description of Peru's navigable rivers in the Amazonian basin, a glance at the map will render clear the whole network or system. The position of the important river port of Iquitos will also be observed, and it is here, right in the heart of the continent, that ocean steamers from Liverpool[1] and Hamburg arrive.

The portions which are navigable of the various rivers already enumerated, from the farthest point of navigation inland, for steamers, at all seasons of the year, are described below. It is to be recollected that some of these rivers rise and fall considerably, according to season and rainfall, and that very long stretches in addition are navigable in rafts, canoes, and small launches above the points given, for long distances, sometimes divided by rapids.

The Amazon.— From Iquitos eastwardly to the Atlantic Ocean steamers ply regularly through Brazil to the Coast. From Iquitos westwardly or up stream similar ocean steamers ascend to the confluence of the Ucayali with the Marañon. The current runs at about 2 or 3 miles an hour. The depth is 4 fathoms minimum.

The Marañon.—Navigable at all seasons for steamers of 4 to 8 feet draught, as far as Port Melendez, near Borja, about 480 miles.

The Huallaga.—Navigable at all seasons for steamers of 4 to 8 feet draught to beyond Yurimaguas, about 150 miles.

The Ucayali and affluents.— The Lower Ucayali is navigable, as far as the confluence of the Pachitea, for

[1] Booth Line steamers.

THE AMAZON AT IQUITOS.

steamers of 6 feet draught, and for smaller ones to Port Bermudez, a total distance from Iquitos of about 930 miles. The Pachitea is navigable throughout the year for launches of not more than 2½ feet draught, and the Palcasu, its head-waters, for those of 3 feet draught, as far as Port Mayro; whilst the Pichis may be ascended in flood times by steamers drawing 4 feet of water, and in the dry season is scarcely navigable. The Upper Ucayali is navigable from the mouth of the Pachitea, against a strong current, for launches of 3 feet draught as far as Tambo, and in all seasons. The Urubamba is navigable for 3-feet draught steamers for a length of 100 miles. This last point is at a distance of more than 1,000 miles from Iquitos, including the windings of the course; and the whole of the Ucayali and its tributaries embodies a vast system of waterways whose importance can only be grasped from maps or travel.

The Madre de Dios and affluents.—The Madre de Dios is navigable in flood times throughout its tortuous course for launches of 4 feet draught, for about 600 miles, against a strong current, and is dangerous in times of low water from floating timber and shallows. The Manu is navigable throughout the year for launches of 3 to 4 feet draught as far as the Surtiteja, and for 3-feet boats up to Shawinto, and the Tambopata for similar boats in times of high water, as far as the confluence of the Huancamayo. Not far from here is Port Markham, near to which point I arrived in my expedition, described elsewhere, to Sandia and Carabaya. Portions of this great river system belong to Peru, Bolivia, and Brazil, respectively.

The Purus.—This beautiful river, as well as its principal affluents, affords tranquil navigation to its head-waters for all kinds of craft, from 4 to 8 feet draught, during flood times, but is more difficult at low-water seasons on account of shallows. The higher portion, which belongs to Peru, contains about 950 miles out of its 1,700 miles of navigable water.

The Yurua.—This magnificent, though tortuous river, which in its upper part belongs to Peru, affords tranquil navigation to launches throughout a considerable distance during times of high water.

The Putumayo, Napo, Tigre, and Morona rivers, which descend from the region north of the Marañon and Amazon, are all navigable for considerable distances —many hundreds of miles—for steam-launches drawing from 3 to 6 feet of water.

Of course, in the present incomplete state of exploration and knowledge of all this vast system of rivers and streams, it is only possible to state length and conditions approximately, as regards some of them. The following list, which includes the foregoing, is the most complete that has yet been made of these rivers, and the particulars therein contained are of considerable geographical importance. The list has been carefully compiled in Lima from the latest data obtainable, from the Lima Geographical Society and other official bodies, by Señor Alejandro Garland, the Peruvian geographer and statistician, and sent me for publication.

As previously stated, navigation in certain places on these rivers depends upon the rise and fall of the water, due to season; and a vast difference is brought about by this, for in flood times the aggregate total length of navigable course is as much as 10,000 miles for steamers drawing from 20 to 2 feet of water; whilst in the dry season this falls to about 5,800 miles, for similar craft. The total navigable length for smaller craft, as canoes and rafts, may be taken at double the above figures, or say 20,000 miles, in times of flood. Here is, then, an enormous network of navigable arteries, which penetrate into the most remote parts of the Peruvian Montaña. These figures are for Peruvian territory alone. Those rivers, such as the Huallaga, Ucayali, Yavari, and others, which fall into the Marañon and Amazon on its southern side are subject to their lowest periods in August and September; whilst, on the contrary, those which enter from the north, as the Putumayo, Napo,

Tigre, etc., are at their lowest periods in February and March. This compensating condition of these great affluents tends to preserve a certain equilibrium in the main stream of the Amazon. The lowest period of the Marañon is from October to December.

The following is the list of these rivers, with their navigable lengths in the corresponding periods, and the draught of steamers or launches which may ply thereon. This is for Peruvian territory alone:[1]

HIGH-WATER PERIOD

For steamers of 20 feet draught

River.	Navigable length
Amazon (Peruvian) . . Total .	422 miles

For steamers of 4 to 8 feet draught

Marañon, to Port Limon	484 miles
Yapura (Peruvian), to Cachuela Cupati . .	124 „
Putumayo (Peruvian), from Cotuhe to Igaraparana	285 „
Yavari, to Galvez	546 „
Napo, to Aguarico	558 „
Tigre, to the confluence of the Cunambo-Pintuyacu	415 „
Huallaga, to Yurimaguas	143 „
Lower Ucayali	868 „
Pachitea	217 „
Yurua (Peruvian), from Ipixuma to Amoña .	273 „
Purus (Peruvian), from Labrea to Catay . .	955 „
Acre, to Irari	223 „
Curaray, to Cononaco	285 „
Aguarico	68 „
Total .	5,444 miles

For steamers of 2 to 4 feet draught

River.	Navigable length
Marañon, from Port Limon to the Pongo of Manseriche	74 miles
Putumayo (Peruvian), above Igaraparana .	391 „
Igaraparana	205 „
Mazan	25 „
Tamboryacu	12 „
Cunambo	37 „
Pintuyacu	37 „
Corrientes	99 „
Carry forward .	880 miles

[1] It is to be recollected that some of this territory is in dispute with neighbouring Republics.

For steamers of 2 to 4 feet draught—Continued

River.	Navigable length.
Brought forward	880 miles
Pucacuro	37 „
Pastaza, to Huasaga	124 „
Morona, to Manhuasisa	310 „
Manhuasisa	74 „
Cangayma	56 „
Potro	12 „
Apaga	12 „
Cahuapanas	19 „
Yavari, from Galvez to Paisandu	242 „
Galvez, affluent of the Yavari	31 „
Huallaga, from Yurimaguas to Achinamisa	87 „
Aipena, to Naranja Tambo	56 „
Tapiche	155 „
Blanco, affluent of Tapiche	68 „
Tamaya, from Putaya	99 „
Abujao	6 „
Aguaitia	62 „
Pichis, to Port Bermudez	93 „
Palcazu, to the Pozuzo	87 „
Upper Ucayali	310 „
Urubamba, to the Mishagua	105 „
Tambo	105 „
Perene, to the Pangoa	6 „
Caspajalf	14 „
Manu	93 „
Madre de Dios, to the Manu	601 „
Aquiri	300 „
Acre, above Irari	124 „
Total	4,168 miles

LOW-WATER PERIOD

For steamers of 20 feet draught

Amazon (Peruvian) . . Total	422 miles

For steamers of 4 to 8 feet draught

Marañon, to Port Limon	484 miles
Yavari, to the Yavari-Mirim	316 „
Lower Ucayali, to Contamana	620 „
Purus (Peruvian), from Labrea to Cachoreia	174 „
Yurua (Peruvian), to the Moa	93 „
Total	1,687 miles

For steamers of 2 to 4 feet draught

River.	Navigable length.
Marañon, from Port Limon to Pongo of Manseriche	74 miles
Huallaga, to Achinamisa	229 „
Lower Ucayali, from Contamana to Pachitea	248 „
Upper Ucayali, from Pachitea to Cumaria	186 „
Pachitea	217 „
Putumayo (Peruvian), to Igaraparana	285 „
Tapiche	155 „
Potro	12 „
Cahuapanas	12 „
Yavari, from Yavari-Mirim to Galvez	229 „
Napo, to Aguarico	496 „
Curaray, to Cononaco	285 „
Morona to Rarayacu	211 „
Pastaza	31 „
Tigre, to the confluence of the Cunambo Pintuyacu	415 „
Total	3,085 miles

Such are the names and, very briefly, the characteristics of those main arteries of the Amazon system of rivers which rise in or enter Peru. It is impossible even to mention the names of the smaller affluents and feeders which fall into them. What unknown regions of forests and hills do they not penetrate? What a charm there would be in ascending and exploring them! What a vast extent of country they give communication to, from the Equator down to the thirteenth parallel of south latitude, and thence eastward *via* the Brazilian Amazon for 1,000 leagues to the Atlantic—a system of natural canals tapping an area—including the whole river-basin of the Amazon throughout Peru, Brazil, Ecuador, and Bolivia, of more than one-third the size of all Europe. Here, truly, is a storehouse of Nature kept in reserve for mankind's requirements of to-morrow.

Peru is fortunate in her possession of the Montaña in that it embraces the *Cabecera de Montaña*, or the long region of the foot-hills and slopes of the Andes, which is not necessarily tropical in character, nor of too hot a climate. The elevation of this region is from 10,000 or 11,000 feet to about 3,000 feet above sea-level, and

includes great gold-bearing areas and india-rubber producing forests. The climate in the upper zone is such as is found in California or the south of England, except that the rainfall is heavier.

Down in the "Montaña real," or region of true forests belonging to Peru, and other adjoining countries, the conditions are different. The dense forests are but little broken by hills, and the only means of travel are by navigation, and in places by means of the *trochas* or cleared trails, made by the rubber-gatherers. As regards navigation in canoes, a remarkable characteristic of some of these rivers is that their head-waters approach each other, being divided only by a flat *isthmus* of comparatively small extent, places which are known as *varaderos*. Over these inter-fluvial places canoes and their contents are hauled (making a portage, as the land passage of non-navigable stretches is termed in Canada), and so communication and traffic between one river system and another is accomplished. One of the principal of these *varaderos* is that of Fitzcarrald, between the river Manu, which is an affluent of the great Madre de Dios and Madera rivers, and the river Serjali, an affluent of the Mishagua, which itself is part of the Urubamba, flowing into the Ucayali river. Between these river systems and the Amazon into which they fall is enclosed a vast parallelogram of territory nearly 1,000 miles long by 500 wide, half of which belongs to Peru; the *varadero*, only about 5 miles long, completing the enclosure. Other *varaderos* are those joining affluents of the rivers Purus and Yurua, and others, to affluents of the Ucayali river. The importance of these to Peru is in the fact that the last-named river is entirely Peruvian, whilst the Madre de Dios, Purus, and Yurua are only so in part, their outlet in the Amazon being in Brazil. These *varaderos* are most interesting topographical matters. Canals cut through them would, in some cases, complete the circuit of thousands of miles of navigation for canoes, and canoe traffic is the preferred means of transport of the rubber-gatherer. Failing this, light tramways across them have

been proposed by the Peruvian Government. A *varadero* or *isthmus* is, of course, the *divortia aquarum* of the river systems which it divides, and it embodies conditions which naturally can only exist in regions of heavy rainfall. The altitude of the Fitzcarrald isthmus is given as 1,547 feet above sea-level, notwithstanding its enormous distance from the Atlantic into which these rivers flow, which it divides. Valuable discoveries have been made, due to the efforts of the Lima Geographical Society, regarding these rivers and *varaderos*, recently, as to their true course in Peruvian territory, and position.

These upper regions of the Montaña are more interesting and invigorating than the lower, for the forest fastnesses are sometimes depressing to those who live there. The horizon is too limited, and the view unchanging. The walls of unbroken forest rise on each side of the river bank and small clearings, and there is little to disturb the monotony of the scene. Nature is oppressive here, but it is in the power of man to remedy the conditions, to a certain extent. And the industrial use of the region will be enormous in the future.

The Indian tribes which inhabit the Montaña are not always savage or dangerous, and there is no doubt that tales of their ferocity have been exaggerated. The india-rubber-bearing regions are being prospected and opened up a good deal in places, and more exact knowledge gained of these tribes. An article from a correspondent of the *Comercio*, a leading newspaper of Lima, written in December 1905, from Port Maldonado, a place at the confluence of the Tambopata river with the Madre de Dios, says:

"Some comment must be made regarding the fantastic ideas, not only of vulgar, but of educated persons, regarding this region. On every hand they imagine they see ferocious *Chunchos*—their quivers full of poisoned arrows; impassable rapids, and the diseases of suffocating and unhealthy climates; lack of personal security and of the necessaries of life. To come to the Montaña is, for such, the adventure of a madman or desperado. But nothing can be falser than this pack of conjectures. In the region

of the Madre de Dios travel is easy by navigation, assisted by these same 'terrible Chunchos,' who are in reality good and hospitable; whilst the climate is healthy, and entire security is enjoyed."

Nevertheless, in other parts of the region a study of its past history shows that savage tribes have murdered explorers and wiped out settlements whenever they were able to do so. Conditions are, however, different to-day. It had been my intention to make some expeditions into these more remote regions, and by careful enquiry at all available sources in Peru, I found that such could have been accomplished in safety, employing care and circumspection, and by arming the bearers and *personnel* with carbines. Gifts of trinkets should be carried for presents or barter. A good idea of travel of this nature will be gathered from the translation which I give of a portion of a journey published in the *Journal* of the Lima Geographical Society. This journey was made by some Peruvians in 1902, and the route followed was that which I have spoken of previously, for a projected railway from the Pacific Coast at Payta to the navigable head-waters of the Amazon or Marañon at Port Limon. Speaking of the Province of Jaen, upon the river Huancabamba and Upper Marañon, the narrator, Señor Muro, says:

"I have known this Province during the last twenty years, and have visited it many times in the pursuit of business in quinine, cocoa, tobacco and cattle, and I consider it the richest part of Peru. It possesses five large valleys; the rolling hills are covered with rich pasture, and at one time more than 80,000 head of cattle existed there. At present all these fertile places are almost uninhabited, and a profound silence reigns there, causing one to meditate upon what a change might be brought about by labour and intelligence. The value of land and property is very low. I know some *haciendas* which can maintain thousands of head of cattle, whose price is only five hundred *sols* (£50). I have seen extensive places of this nature rented at £20 per annum. The lower valleys are generally flat, and the temperature is hot. The coffee plant grows to an extraordinary size; the tobacco of Jaen has a deserved fame throughout Peru, and yields two crops per annum,

and as for cocoa, the soil is peculiarly adapted to its cultivation. A poor emigrant I knew, who devoted himself to planting cocoa here possesses now a plantation of 15,000 plants, which yield him a good income. For days together the traveller journeys over these fertile plains without seeing any habitation except the occasional hut of an Indian. These places are adaptable for immigration, but roads must be constructed first. Divers classes of timber abound, as also tropical fruits, quinine, medicinal herbs, vegetable wax and ivory. Some day the world will be surprised with the mineral wealth of this region, also such as magnetic iron in great deposits, copper pyrites, silver, gold, coal, salt, lime, etc.

"From the history of these places it is known that the Spaniards worked rich gold mines there, but unfortunately civilisation suffered a blow by reason of the rebellion of the Indians—the Jibaros and Bracamoros—when the white population was nearly exterminated.

"Since then little has been done, for the Spaniards, being exposed to the constant attacks of the warlike Jibaros, left these rich mines in abandonment, from which they must shortly awake. The inhabitants of one of these valleys are principally Mestizos, and are distinguished for their idleness and vices. Nature has given them such extraordinary facilities of exuberant resources in their fertile soil, that, without any effort, they are able to live and indulge in licence and immorality, principally drunkenness, dancing and adultery. They are generally of weak frame, and many idiots and *cotosos* are found there. The inhabitants of Jaen, on the contrary, are distinguished for their hospitality and a certain sense of honesty which they display."

They continued their journey, fording streams, passing through cocoa and rice plantations, navigating rapids in rafts and canoes upon the Utcubamba and Marañon. They make especial mention of the abundance of india-rubber trees, and describe some of the Indian inhabitants of the region, as follows:

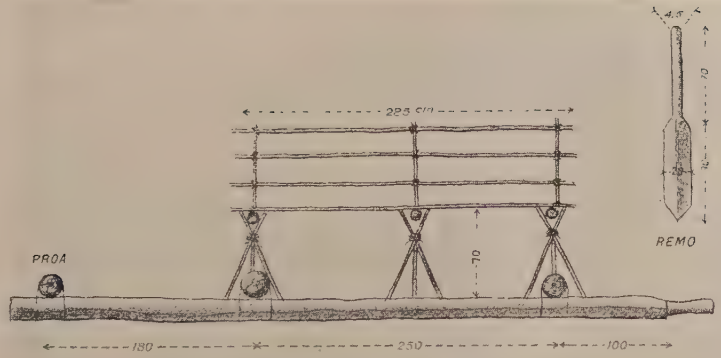
"As we descended the river we approached two large Indian houses surrounded by savages, among them a grotesquely dressed old man covered with *cascabeles* (the tails of rattlesnakes), which had been given him by the *shiringueros*, or rubber-gatherers. This was the famous

Curaca Antonio, known for his ferocity and bloody instincts. He received us courteously, and we entered one of the dwellings. These are of oval form; the walls of palm stems and the roof of palm leaves, beautifully woven. Inside was a stand of arms, including Winchester rifles, guns, and lances; also numerous earthen pots and plates. Around the walls were arranged the beds, formed of the elastic stems of cane. Tame monkeys, parrots, dogs, and hens were there.

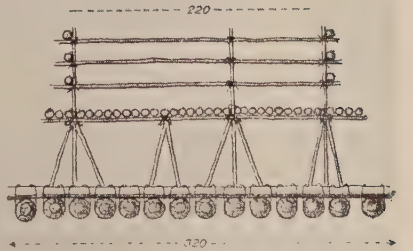
"A *curaca* is the owner of a dwelling, and these are large, and contain as many as forty persons or more. These tribes are called Aguarunas, Antipas and Huambisas, living all along the Alto Marañon in the region between the rapids and the affluents. Notwithstanding our repeated enquiries we were not able to find that these Indians know the name of their nationality. These have been given them by the whites, or Christians. All these tribes, who live in continual and sanguinary war among themselves, possess the same language and customs. They are intelligent, and learn with facility whatever they are shown. It is probable that they are descendants of the great nations of the Jibaros or Bracamoros.

"They have an apparatus for communicating at distances that might be described as a species of 'wireless telegraphy.' In all the dwellings there are dry, hollow trunks of trees, about 2 yards long and ½ yard in diameter, with five holes formed therein, diminishing in size. By striking this curious instrument with a stick they are able to communicate to long distances. I witnessed a conversation sustained between two Indians whose dwellings were situated at least 500 yards apart, with the Marañon between. On another occasion, two hours before our arrival at Huaracayo, we heard the well-known blows which the *tunduy*, as the instrument is called, produces. These were repeated from dwelling to dwelling, and when we arrived there were more than two hundred Indians awaiting us, who had been informed of our coming by this means.

"These people greatly fear contagious diseases, and maintain separate houses like isolation hospitals, to cure those attacked. They are sanguinary and superstitious, and also treacherous. The attacks upon their enemies are well premeditated, and never from the front; and they murder all their captives, with the exception of the women, who are kept as wives. In war time they elect as leader the cruellest among them, but afterwards each *curaca* is



ELEVACION LONGITUDINAL



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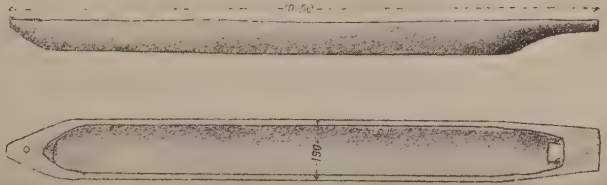

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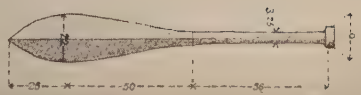

quite independent, and owes no obedience to any one. They believe in no divinity (on this point see subsequent chapters, C.R.E.). The only thing they fear is a species of evil spirit supposed to inhabit the whirlpools. They are polygamists, and treat their women well. The aspect of the men is generally good ; often they are of well-developed chest and correct features. The women, much smaller in stature, might pass as pretty. These people live by hunting and fishing, and they till a small patch of land, which the women sow and reap, with yuca, bananas, mani (pea-nuts), camote, sugar-cane, etc. The men weave shawls of cotton, which are used as waist-cloths. The women use a species of chemise without sleeves, tied round the waist. Their faces are painted and their teeth stained black."

Another of the party—Brüning—says:

"Although these Indians are generally held as treacherous, I have always heard it said by disinterested people that the whites are the cause of this, which might rather be called retaliation for evil acts committed by them. I have personally seen the bad methods employed by the *caucheros*—the rubber-gatherers—against the Indians."

The writer in the *Comercio*, before mentioned, of Port Maldonado on the River Madre de Dios, 800 or more miles away from the above-described region of the Marañon, to the south-east, says of the *caucheros*:

"It looks as though the New Commissioner were resolved to put an end to the barbarous custom of sending expeditions, organised by the authorities themselves, or by the *caucheros* for the repugnant object of enslaving the poor Chunchos (the Indians of that region). As both workmen and women are scarce, and as there is a great demand for both, armed expeditions are frequently organised, and fall upon the tribes of Indians, good or bad, making prisoners in the midst of bloodshed and extermination. Impulsed by the profits of 'sale' of robust youths and healthy women, they tear sons from mothers and wives from husbands, without commiseration."

Continuing the account of the Marañon expedition by Brüning, a description of the raft they used in navigation is given. These primitive craft are largely employed

in descending the rivers, both for passengers and cattle, but they are not brought back again up-stream.

"The raft was composed of fourteen trunks of *balsa* wood — that which is preferably used for the purpose, as being very light. These were about 10 inches in diameter and 5 or 6 yards long, forming a raft about $3\frac{1}{2}$ yards wide, by $5\frac{1}{2}$ long, secured together with transverse trunks, tied with *bejucos*, or withes. Near the stern was formed a platform of cane, the uprights being driven into the trunks, with a handrail, for the passengers and baggage. The propellers, one to each rower, are paddles of willow wood $5\frac{1}{4}$ feet long and 12 inches wide across the blade. This raft is shown in the accompanying drawing."

The canoe with which they continued their voyage was $10\frac{1}{2}$ metres long and 60 centimetres wide — or about $34\frac{1}{2}$ feet by 2 feet—a "dug-out" of a single piece of cedar, and which cost them £4, including the rowers' salary. This is shown in the sketch, as also the paddles. They passed the *Pongo de Manseriche*, or rapids, at the head of possible steam navigation, arriving at Port Melendez, and breakfasted the next day on stewed monkey.

I have translated and given the foregoing extracts as being reliable, for, although those who undertook the expedition were not necessarily scientific explorers, still they were careful observers, and recorded their observations truthfully.

Anuesha Indian Woman of the Forests.

CHAPTER XXVII

THE MONTAÑA AND THE AMAZON—*Continued*

THIS intensely interesting region of the Peruvian Montaña is becoming more known, due largely to the explorations made recently by Engineers and representatives of the Government and of the Lima Geographical Society, whose expenses and salaries are paid, so relieving them of the strain which sometimes falls to the lot of other travellers. For expenses are often heavy on expeditions in such countries, and, personally, I have spent a good deal of money in these matters, in different parts of Peru.

I have quoted already from the reports of some of these employé-explorers, which reports have been presented me officially by the Departments of the Peruvian Government, on whose behalf they were made. Among some of the principal of these explorers are Colonel Portillo, present Minister of Public Works, Senator Zegarra, Señor Rosell, and the Engineer, Von Hassel, all of whom I have the pleasure of knowing. The last-named has made some considerable study of the aborigines of the region of the Amazonian forests of Peru, and this embodies the most recent knowledge of the subject. I have quoted in the last chapter from the reports of this Engineer, upon the subject of india-rubber, and the following extracts are from a report published in February, 1905, in the official publications. A long list is given of the names of the different tribes, which it would, however, be tedious to reproduce here, although, of course, they are of value ethnologically. In the region north of the Marañon and Amazon are given the names of 46 tribes; in the central region, between latitudes 5° and 11° south, 27

tribes; from latitude 11° south, downwards, 26 tribes; and tribes of other regions, 15 names. The total number of the Indians of these tribes is given as 122,000 minimum and 152,000 maximum; it not being possible to give a more approximate estimate in view of the immense territory covered.

At the beginning of this chapter is the portrait of a young Indian woman—does not woman of whatever race or status deserve first place, courteous reader? She is of one of the tribes of the central region—the Amueshas—which has its own language. These Indians use bows and arrows, and are of a docile nature. Some others shown in the plates are the Lorenzos of the same region; the Campas of the southern region, and the Chunchos and so-called Cannibals.

"Among the Aguarunas of the Marañon the women are quite good-looking, with regular features. Here they build the war-towers for defence, and use the *tondoy*, or signalling instrument before described. They believe in witcheries and are polygamous, are of middle stature and fight with poisoned arrows. These were the Indians who, years ago, destroyed the town of Jaen, previously described. Both men and women wear short, primitive garments. They believe in a good and an evil spirit; build houses, and cultivate the ground. The Amahuachus of the Ucayali river are of middle stature; they use bows and arrows, are hostile to the whites; cultivate maize, bananas, etc.; rarely wear any dress, and in some cases use stone hatchets still. The Conibos, on the Upper Ucayali, use bows, arrows, and maces (head-breakers); lances for spearing fish; are good hunters and fishers; cultivate large plantations, and have their own language. They retain legends, and hold the religious practice of dedicating to the moon the virginity of the brides in marriage—an Inca custom. It is to be supposed that this tribe, like the Shipibos and Shetibos, is of Inca origin, emigrants from the Inca Empire upon the invasion of the Spaniards. They are possessed of a certain spirit of rectitude, and are in continual contact with the whites.

"The Cocamas inhabit the region near the confluence of the Ucayali with the Marañon. They are much mixed with the Indians of the Andean uplands, and were in relations with the Inca Empire. They have their own

THE MONTAÑA: CANNIBALS OF THE PACHITEA RIVER.

THE MONTAÑA: LORENZO INDIANS.

language, and have adopted all the customs of the whites. The Campas tribe is one of the most numerous of the Amazonian basin, and due to their customs and assimilations of civilised methods occupies a high place. They are much subdivided, and occupy an enormous region, including the left sides of the Urubamba and Ucayali rivers, and the great pampas of Sacramento, and the great *pajonal* or grass-covered plain. They use the *cushma*, a species of shirt without sleeves woven from wild cotton; bows and arrows; and cultivate extensive plantations of maize, yucas, bananas, aji (or Chile pepper), and potatoes. In general they are of some nobility of features, and friendly to the whites, and are good rowers, and easily learn the use of the rifle. They are polygamous, and some of the sub-tribes are anthropophagus, in the belief that they assume the physical strength and intellectuality of those they eat. The Lorenzos belong to this tribe.

"The Huachipairis are a hostile tribe upon the upper Madre de Dios river. The men are of ferocious aspect, exaggerated by the custom of perforating the upper lip, and introducing therein sticks, feathers, and shells. They cultivate plantations, and use bows and arrows; generally naked; weave cloths and ropes of wild cotton, but are lazy. They speak a special language, and have resisted both the Spanish and the Peruvian advance. Many of them understand the Quechua and Campa languages, the latter being introduced by the women of that tribe, which they constantly steal. They believe in witcheries, but have no fixed religion. They paint their bodies red and black, and are polygamous.

"The Inje inje, a small tribe of a few hundred members, live in some of the ravines affluent to the Curaray river, and are the least known of all. Their main peculiarity is in their language, which consists of the two words *inje-inje* alone, with which they explain everything by means of different accents and gestures. They plant land; the mode of clearing this being by wounding the tree-trunks with stone hatchets, which then dry up and die. They are not hostile, but avoid contact with the whites.

"The Machigangas inhabit the region of the upper Urubamba and the Pachitea rivers. They are low of stature and with regular features; not hostile; planters; house-builders, and polygamous. The only marriage ceremony is that where the bridegroom goes to the bride's hut and hauls her forth by the hair of her head

to take her forcibly to his own! This tribe was in contact with and dominated by the Incas, and preserve legends in this respect, one of which is that upon the Spanish advent thousands of Indians from Cuzco, under the direction of an Inca prince, immigrated to the Montaña. There exist various stones with chisellings, which they made in their march along the Urubamba river, and the Inca fortress of Tonquini, or 'Trunk of the Inca,' as well as various well-constructed roads in the region inhabited by these savages, are witnesses that they were allied to the Incas. They adored, in their manner, the sun and the moon, and speak the Campa language.

"The Nahumedes are an almost extinct tribe, on the river of the same name. They are those who attacked the explorer Orellana, who believed that these savages, with their chemises or shirts, and long hair, were women-warriors, or 'Amazons,' and which name was given to the great river. This must be the explanation of the supposed existence of women-warriors in these regions, for no legend or history among the Indians can be found relating to any Empire of women.

"The Orejones Indians inhabit the region of the river Napo and its affluents. Their peculiarity is that of making their ears large; and some of them have this organ as long as the face and as wide as the hand. This has been attributed by some to a supposed Inca custom, and they hoped in this manner to be considered descendants of the Imperial families. The Piros reside on the Urubamba and upper Madre de Dios. They are few in number, and small-pox has decimated them. According to their traditions they had relations with the Incas. They believe in one God, whom they adore and to whom they pray.

"In the Amazonian region of Peru there are tribes which have their own language, without counting the dialects. The most primitive is the Inje inje, before mentioned, for, by means of these two words, varying the pronunciation and accompanying gestures, they express everything. The most complete languages are the Campas, Aguarunas, Antipas, and Muratas. Regarding the matter of numbers, some tribes can count to five, some to ten, whilst others only express higher quantities by a movement of the fingers. As to births among these people, they are realised with rapidity; the elder women, assisted sometimes by a man, perform the necessary operations, the patient, among some tribes, being suspended by cords to a beam in such a manner that the body is in a vertical position.

"The Aguarunas, among other curious arts, possess that of making reduced human heads. The heads are reduced to about one-fifth of their volume, more or less, by the following process. The head—cut from the body of some enemy—is left for some few days upon a pole, and when half decomposed a vertical cut is made in the cranium, all the bones being taken out, leaving only the thick skin. The interior is then carbonised with hot stones and the head is placed on the smoke of a fire made of certain palm roots, which smoke having some astringent quality like that of alum shrinks the head to the desired size. There is a tribe near Cusicuari, on the river Orinoco, which reduced entire human bodies in this way. The tribes of the Putumayo and Yapura rivers smoke-dry and preserve the hands of their enemies, whilst the Cashibos keep their teeth.

"The *tunday* exists among the greater part of these tribes. It is an instrument for communicating among them, consisting of the trunk of a tree about 1½ metres long, of a species of balsa wood. By means of hot stones three holes and a vertical groove are made therein; the apparatus is hung by means of a cord to a high tree and tied below to a stick buried in the ground. The blows given with a club send acoustic waves for 15 kilometres or more, according to the force of the blow. The distances apart of the holes in the trunk form a species of scale, of varying notes."

I have spoken in a previous chapter of these signalling or communicating instruments, and one traveller in those regions likens them to a species of wireless telegraphy. The real wireless telegraphy will now, however, supersede this method of communication of primitive man in the Montaña of Peru, for the Government of that country has installed the apparatus for this purpose. Overcoming many difficulties the apparatus has been transported from Iquitos to Masisea, at the confluence of the Pichis with the Upper Ucayali river, and has been erected at that point. From this place communication is now established with Port Bermudez, the head-waters of navigation on the way to Lima. This is an enterprising piece of work on the part of the Government of Peru. Continuing the foregoing translation:

"Many of the tribes to the north of the Marañon prepare poisons, which form an article of commerce between those who use the blow-pipe and the lance. The principal poison is prepared from a plant, and has the quality of being fatal to animals in hunting, without being prejudicial to man in eating the flesh. It is put up in little earthen jars, and also in hollow canes, by varying tribes. The poison used by the tribes of the Putumayo and Yapura rivers, on their lances in war, is made from bodies in a state of putrefaction.

"All these tribes have in their possession prisoners of war which they use as slaves, which are, however, treated with humanity. The adoption of dress among these tribes is from three causes: morality; reasons of climate—cold near the Cordillera; and as a protection against mosquitoes. The *cushma*, largely used, is a species of shirt without sleeves, and is woven of wild cotton and sometimes painted or stained in lines or figures. Both men and women are addicted to adornments, such as painting, feathers, and skins of animals. They make fermented drinks of yuca and maize, and consume considerable quantities on the eve of wars, weddings, or other events. They also make an agreeable drink with bananas.

"Certain stationary tribes of the Madera river received some culture from the people who inhabited the island of Tumpinambaranas — the effect of the Spanish and Portuguese influence is new and easily recognised. The Amazonian tribes present all stages of culture, from the Inje inje, of the stone age in their language and implements, down to that assimilated by the tribes near to the presence of the white man. Some of the principal ceremonies of the Indians are those connected with matrimony. Among the Campas the members of the tribe, men and women, form a circle, in the centre of which the two lovers deliver themselves over to those nuptial embraces which the white races perform in private. They consume fermented drinks, forcing the girl to partake thereof; and among some of them the Inca ceremony of dedicating her to the moon is observed.

"The chief motive of hostility between the tribes is the robbery of women; and the same holds good with regard to the white rubber-gatherers, or *caucheros*. Among certain tribes the influence of contact with the Inca Empire is plainly to be seen; the Mojos of the river Madera were those who were most influenced by

the expedition of the Inca Yupanqui. Some of these tribes are rapidly disappearing, due to contagious diseases —especially small-pox; wars with other tribes and with the white man; alcohol; fevers due to working as rubber-gatherers in malarious regions; slavery, brought about by the rubber-gatherers; great mortality among the children, and the consequences of polygamy, etc.

"As to their religion, their beliefs are a mixture of witchcraft and superstition. But, with the exception of the Campas, who worship the sun and moon, as shown them by the Incas, they believe in a good spirit and a bad spirit. Among some of them also exists the belief in transmigration of souls through animals; and some also believe in a future life, following the present. As to the beginning of the world, a legend among them says that man lived at first in a great subterranean cave, whose entrance was guarded by a tiger. One day a valiant and rational man, resolving to give liberty to his kind, fought and killed the tiger, and the inhabitants of the cave went forth. As they were all very dirty, they heated some water in a large vessel in order to wash themselves. The first lot which performed this operation became white; the second — the water being now dirty — were the Indians, and the third — in still dirtier water — the negroes. The Great Spirit (God) had amused Himself in making a great earthen pot which He placed on high, forming the heavens."

Such are briefly some of the principal tribes of the Montaña—the infidels, as they are termed. It is seen that their customs are primitive. Some of them wear a little clothing; some go naked and unshamed. They are fighters, fishers, and hunters. They weave and plant, and, in short, exercise the few arts and crafts of primitive and undeveloped man. There they live in the shadow of their everlasting forests, upon their endless rivers and happy hunting-grounds. There they abide, imperfect creatures; offshoots in the plan of Nature's handiwork; experiments, perchance, of her evolutive forces. But are they the primitive elements of man, or are they the remnants of a past civilisation? What is their object, their end? To be exterminated by the rapacity of the whites — to be assimilated into the bosom of a new

race? To give place to the inexorable march of stronger nations — those whom Fortune has bid cultivate their mental as well as their physical faculties. None of them appear to have formed any state of common government; they are all composed simply of groups of families. Small sub-tribes are headed by a *curaca*, but these have no cohesion among themselves, and one may be at war without the others taking part. This division is — as ever—fatal to their existence as a nation, and permits the *cauchero* to more or less work his will; and this want of cohesion—as in the history of other races—will doubtless be the element conducive to their disappearance.

There is, then, this enormous territory, destined—and soon—to be overrun by the white man, and taken away from its present inhabitants. There are these rich and limitless areas lying fallow for the uses of civilised mankind; the most civilised nations of which, it must be confessed, have not yet, themselves, found the secret of fair possession of their own present lands, nor equitable apportioning thereof for the people which live and move and have their being thereon!

CHAPTER XXVIII

THE MONTAÑA AND THE AMAZON. INDIA-RUBBER

WHAT, now, is the stimulus which is disseminating knowledge of these hitherto little-known regions? It is a commercial one. Commerce, the love of gain, has always been the great explorer, reducing all theory and illusion to fact and experience. Commerce, the great buccaneer, has always opened up desert places, and now, not in search of gold, silks, or spices, but of what?—india-rubber. This is the golden fleece of the modern Argonauts upon these savage rivers; this is the prize for which men sell their souls and destroy the souls and bodies of their fellow-creatures as they did in days gone by for gold; for, written largely on the history — and it is only a history of to-day — of this modest and useful product, is the Iniquity of business. Cruelty, cheating, oppression, slavery, and even murder have characterised it, from the Congo to the Amazon. Evil is being done in order, we trust, that good may come of it — ever the Jesuitical characteristic with which Nature seems to work through man and commerce. But I digress. I have wandered into the by-paths of abstract fields. Yet let us see what other observers say: I translate from an official report made for the Peruvian Department of Loreto.

"The strong endeavours to put into contact these distant regions with the civilised world, and especially the industry of obtaining the 'black gold,' as the india-rubber is called, have produced intense upturnings in the savage tribes, some of which have accepted the civilisation offered by the *caucheros*, or rubber-gatherers, others having been annihilated by them. On the other hand, alcohol, bullets, and small-pox have worked such devastation among them

that their complete disappearance is a matter of a few years. Protest must be made against the abuses and unnecessary destruction of these primitive beings, whom the avarice of so-called civilised man has placed among the 'products' of the Amazonian market, for it is well known that these Indians are quoted there like any other merchandise. Steps ought to be taken by the Governments of Peru, Brazil, Colombia, Ecuador, Bolivia, and the other countries bordering on the rivers to protect these unfortunate beings, who, without any guarantee from the law, are exposed to the attacks of the whites, who hunt them like wild beasts, recognising as their only value that represented by their sale."

There is no doubt that outrages are committed in these regions, in the extraction of india-rubber, even taking into account the exaggerated descriptions which some travellers always give of what they see, and especially of what they hear in such places as regards the barbarities committed upon the Indians. I have quoted in the previous chapter an extract from a Lima newspaper —the *Comercio* — where it is stated that the Indians are captured and sold in much the same way as in the old slave days. It seems probable that these races will become much depleted if existing methods are continued, and the only compensating circumstance from the point of view of labour is that a new and mixed race may arise, formed by the admixture of the *caucheros* and foreigners with the Indian women. In the meantime humanitarian sentiment cannot but feel regret at such conditions, and anger that they should exist, especially within the territories which style themselves "republics." Of course, some allowances must be made for these governments. The rubber regions are far off from centres of authority, and often difficult of access; whilst to efficiently police these vast systems of rivers and forests would heavily tax the resources of the smaller countries who own them.

The Lima Geographical *Journal* of December, 1904, publishes an article upon the india-rubber resources of the Amazonian Montaña of Peru. It says:

"The two principal rubber-yielding trees of this region are the Hevea Guyanensis, which has a trunk 50 to 70 feet high, and about 2 to 2¾ feet in diameter, forming an almost cylindrical column crowned with its branches. The sap is smooth, and of a grey colour. Then follow the Castilloas, with a trunk about 50 feet high and 2 to 3 feet in diameter. The Hevea Andenense, of the first division, is so called because it is found up the slopes of the Andes to an elevation of 2,000 feet above sea-level.

"All the eastern part of Peru, from the foot of the Cordillera and following the Amazon and its affluents, is the country of the rubber trees. Notwithstanding the apparent uniformity of the forest it is really divided into sections by subtle lines—a division in which are comprehended the rubber trees, for in the great Amazonian basin the polar lines which divide the vegetable world cross. Two groups of trees, apparently of the same class and family, so separated, differ much in their respective products, both in quality and quantity. The want of knowledge of these matters has caused great loss to capital invested in the industry of rubber extraction, for a rubber tree of the same family and species varies much in its product — doubling this at times according to the zone, whether interior or exterior of the polar line, in which it is situated. Many enterprises have failed from this reason: that the production did not equal the expense, and not necessarily from bad management. This fact induced me to make close study, during ten years of this interesting matter, and adduced this theory of the polar lines."

I give the above extract and theory for what they are worth, and there is no doubt that their author gave much time and observation to the subject. Continuing, this writer says:

"Three species of trees produce the whole of the india-rubber exported from Peru. These are the *Caucho*, the *Orco-shiringa*, and the *shiringa* or *jebe fino*. Generally the term 'Caucho' is used for all classes of rubber, but the technical definition gives this, as referring only to the commoner kind, and which is obtained by felling the tree and running the sap completely out. This is the principal source of Peruvian rubber at present. The second—the Orco-shiringa, is superior, and belongs to the

Heveas. At first sight it does not differ from the best shiringa, and the sap is obtained like the latter by the method of tapping into tin cups or *tejilinas*. The true difference between the two last is in the superior quality, elasticity, and colour of the true shiringa. The polar line of the inferior kind is much more advanced westward than that of the best. The best shiringa, of course, produces the rubber which fetches the highest price." (The "weak-fine" of commerce.)

"The india-rubber trees are not uniform in their occurrences in the forests. In some places amid the chaos of hundreds of different kinds of trees they are more pronounced than in others; and the *cauchero* and *shiringuero* seek these favoured spots, their ability or good fortune in finding them, determining their success, or otherwise. In an area of 100 yards square there may be a single rubber tree, or there may be twenty, thirty, or more.

"The method of the *cauchero* is as follows:—The *cauchero*, after having ascended the stream in his canoe, to some virgin region, establishes his habitation on the bank, and then undertakes successive excursions into the forest, making provisional camps which serve as centres, marking in his passage, with his *machete*, the trees he encounters, and which signs of possession are religiously respected by other *caucheros*. A sufficient exploration having been made, and trees marked, he proceeds to the extraction of the sap. If his object is to extract *sernambi* of Caucho, he allows the milk to coagulate by running into small grooves in the earth, where it solidifies in long strips, which, when rolled up into balls, are known in the market by that name. If it is desired to obtain rubber in sheets, the sap is mixed with soap or a certain kind of earth, and poured into a square mould, where it solidifies.

"This form of exploitation conduces directly to the destruction of the trees. Immense regions have already been devastated, and the day is not far off when this source of rubber will have disappeared completely. In the extensive regions of the Madre de Dios river this is a question of fifteen or twenty years.

"The shiringa trees are worked in a somewhat different manner, by opening a path in the forest between them, and portioning out the land to the workers in areas called *estradas*—this representing the extension which can be attended to by one man. This area may contain from 120

to 200 trees. The *shiringuero* makes incisions in the trunks of an inch or more in length, from four to ten in number, according to the size of the tree, and the small tin cups are hung below. Later in the day—he has begun at daybreak—he collects the contents of these utensils in a bucket, and the milk is then coagulated in the smoke of a fire, where it is converted into balls. An average calculation for a shiringa tree is about 11 lbs. in six months, and that of the Orco-shiringa 6½ lbs. of pure rubber. The Caucho gives, according to its size, as much as 100 lbs., but once only. The amount which the *cauchero* obtains in a year varies greatly. At times he may not cover his expenses; at others he may make some profit. In fairly favourable conditions he may extract 5 to 10 tons; whilst the *shiringuero*, attending to two *estradas* of 100 to 120 trees, may obtain about a ton of rubber. During half of the year the latter is obliged to devote himself to other work, as the shiringa-bearing ground is then generally flooded.

"It is hardly necessary to enter into details as to the advantages which would accrue from planting rubber. From 1,000 to 1,500 trees might occupy the present space of 15 or 40, whilst the same labour would attend them. Some planting has been done on the Acre, Purus, Yurua, and Madera rivers, but only a little, notwithstanding its vast importance for the future of the region. Much care must be exercised in the selection of the ground, and in normal conditions, the tree requires from eight to ten years before it should be tapped. This industry offers favourable conditions for the collocation of capital."

The life of the rubber-gatherer is not an easy one. Accustomed from his youth up to a solitary existence in these immense forests he relies only upon himself, and is ever ready to suffer the hardships with which Nature punishes those who strive to penetrate too deeply into her workshop. He is a good hunter, and this helps him in his larder, as well as in protection from the dangers which assail him from wild beasts. His headquarters are in Iquitos, and there he returns with his spoils, rests and amuses himself, makes his purchases of provisions, and so forth. Again he sallies forth towards the most remote regions. A steam-launch carries him from Iquitos to where steam navigation terminates, and with his wife,

children, and belongings, including his rifle, gun, sewing-machine, and accordion, he enters his canoe. A man in the prow with a long pole propels the craft up stream, whilst a man or woman in the stern guides it with a paddle; and so he penetrates—content and cheerful, for he is a born nomad—the most remote region of the vast Amazonian interior.

Considerable mortality takes place among the *shiringueros*, especially due to *tercianas*, or intermittent fever, and *paludismo*, or malaria. This is due to their work being, perforce, carried on in swampy and inundated places—the habitat of the shiringa, rather than the Caucho tree. Yellow fever and *beri-beri* are also suffered from at times, and all those that remain in these regions of the Montaña acquire a yellow tinge of complexion. But these evils are largely due to exposure and lack of good food, and are soon overcome upon a change of climate.

The climate of the Amazonian region is a much disputed theme. Like all matters of this nature its characteristics are much exaggerated, some accounts condemning it utterly, whilst others speak of "eternal spring." The real facts are that the effects of the climate there, as in many other places, depend largely upon the regimen of living observed by the traveller or dweller there. Small-pox, fevers, and kindred diseases are found in the highest and coldest tablelands of the Andes, as well as in the hot valleys, plains, and forests, showing that diseases are not necessarily due to the place or climate, but are largely brought about by the methods of the dwellers there. Of course, the tropical forests are unhealthy in places, and will remain so until man undertakes to drain and ventilate them. The most troublesome affairs are the intermittent fevers and malaria, but they are encountered generally in determined places, and there are vast regions which are free from them. It is easy to exaggerate, but it must be remembered that the basin of the Amazon is the most extensive in the world, and that conditions vary much in its varying regions. In the *Journal* of the Lima Geographical Society for 1904

appears an article protesting against a communication made by the American Minister in Brazil to the Washington Government, to the effect that every ton of india-rubber exported from the Amazonian forests costs two lives! This was in reference to the climate, rather than to other matters, and probably referred to the Acre region. The article says:

"If in reality the climate of the Amazonian valley were so fatal as to cause the ratio of two deaths per ton of india-rubber produced, it would result that no inhabitants could exist in the region, and it would be very difficult for foreigners to escape with their lives—foreigners sometimes, who, temperate enough in such places as Washington or elsewhere, in these regions indulge their appetites without stint. Statistics will show that the calculations of the American Minister are the fruit of fantasy, and more humorous than exact. From the year 1894 to 1901 there were exported nearly 218,000 tons of india-rubber from the Amazonian region, which would be equivalent to something less than half a million deaths, according to the above fantastic calculation, and the industry of rubber production would become, in such case, the juggernaut of South America, or the Moloch of the Amazon!

"The region is, among those found in the tropics, one of the best on the earth, its climate being infinitely superior to places in the same latitude, as Sumatra, the Congo, Zanzibar, etc.; and, far from being a region of death, is favourable to the development of European races. This opinion is corroborated by such travellers as Darwin, Agazzis, Humboldt, and many others, and proved by all the meteorological and demographical statistics and data scientifically obtained at Iquitos, Manaos, Para, etc., which are all important centres of population. It is true that the valleys of the Yavari, Yutahy, Madera and Acre rivers, upon their being explored, might have been termed 'death valleys,' by reason of the paludic fevers there, during the four months of May to August: conditions which have now greatly changed. Others, as the Ucayali, Marañon, Huallaga, Morona, Pastaza, Tigre, Napo, Putumayo, Jurua, Purus, and Madre de Dios are free from these matters."

The conditions obtaining in the part of the Amazonian

basin belonging to Peru are, as has been stated, favourable to the industry of rubber-gathering, and something is already being done in the way of establishing work on a large scale by foreign companies. The rubber exports from Iquitos in 1904 were 2,221 tons against 1702 tons in 1902: this without counting the amounts which were smuggled out of the country, and which possibly represent an equal quantity. From ports on the Pacific side of Peru, as Payta, Callao, and Mollendo, other smaller but growing shipments were made, it being found in some cases more advantageous to carry the rubber westward over the Andes to the Pacific Coast than to take it eastwards to the Atlantic through Brazil.[1]

There are several routes by which the Peruvian rubber forests may be reached from the Pacific Coast. The most northerly of these is from Paita to the Marañon; followed by that from Eten to the Marañon, Pacasmayo to the Huallaga; Callao to the Mayro, the Pichis or the Perene; Pisco to the Apurimac, and Mollendo to the Inambari. In all these roads the Andes have to be surmounted, and in the Callao and Mollendo routes this is performed by rail. I have spoken of these railways elsewhere.

The upper edge of the Montaña, of which I have spoken, presents no terrors of climate, fevers, reptiles wild beasts, or savages, and is a region of immense interest. It is hard to conceive a more alluring project than that of the establishing of businesses to work the resources of gold, india-rubber, timber, etc., in these vast regions; and there can be no doubt that the adventurous spirits of Europe, and the surplus capital which is ever seeking investment, must sooner or later grasp the possibilities of the Montaña of Peru.

As regards the rubber lands, the Peruvian Government is anxious to attract settlers, and to open up the

[1] The value of rubber exports from all Peruvian ports has been as follows:—

1903.	1904	1905.	1906.	1907 (Estimated).
£441,595	£670,137	£913,990	£1,000,000	£1,200,000

country; and with this end offers the land under easy terms and concessions. The object of this is twofold: first, to increase the wealth and population of the country by making use of these regions; and, secondly, to assure possession, for there is no stronger proof and safeguard of ownership of much of the debatable territory of South America than the existence of colonies formed of subjects of a foreign nation.

The terms upon which these lands can be acquired are the following:—(1) Leases of ten years' duration, and (2) renting of rubber lands. The first prohibits the cutting down of the trees, and exacts a royalty of 4 per cent. *ad valorem* of rubber extracted, which is to be paid at the Custom House. There is no fixed rent, therefore, to be paid on the land. Under the second form the *estradas*, or rubber areas (containing about 150 trees each), are leased at the rate of about fivepence each per annum, and an equal sum for each *hectare*—or 2½ acres—in addition. Thus, if a survey of ten *estradas* shows that they occupy 20 *hectares*, the annual rent would be twelve shillings. These terms, it will be seen, are by no means onerous. Large areas of land have already been acquired, and in the register of concessions of rubber lands figure some hundreds of individuals and companies whose possessions aggregate several million acres. There is no doubt that some of these will begin planting, in view of the possible exhaustion of the natural trees and the success which the cultivation of india-rubber is giving in other parts of the world. The future will doubtless see many thriving plantations of shiringa where now only the primitive *cauchero* plies his precarious occupation, amid the tangled forests of these untrodden solitudes.

CHAPTER XXIX

THE PERUVIANS

It is time, having followed out our observations of the physical conditions of Peru, to more fully describe the human element of the country.

In criticising the character of a people, or in endeavouring to sum up their virtues and their defects, the impartial critic should have before him the defects, past and present, of his own country. He will examine under the light of relativeness, and contrast such conditions with those which pertain to equivalent epochs in the life of other and more advanced communities. He will remember that to endeavour to define or specify national characteristics is to enter upon one of the most delicate and elusive matters which presents itself to the observer.

The Spanish-American nations generally have what might be termed the defects of small communities. They have also developed the misconception of youthfulness, which, freed from restraint, has, under the name of liberty, sometimes entered upon licence. On the other hand, they possess some qualities which will stand them in good stead in the future; and they are free of some defects which are noticeable in the Anglo-Saxon.

One of the most serious charges which has been brought against the Spanish-Americans generally, is that their sense of commercial honour is weak. However impartial the foreign observer may desire to be, he is obliged to admit that this charge has some foundation in fact. Whether, if it were possible to calculate a percentage of persons in those communities who escape from compliance with their business obligations, it would be found that it were higher

than that, for example, of England, is doubtful. But probably it would be higher. This failing is one of the defects which are partly engendered by small communities. It does not so much exist in larger business centres where there is the constant friction of frequent, numerous, and larger operations. Of course, the Spanish-American might retort that the "Yankee," in years within our memory, was the most tricky trader that the world has known, and that he has not altogether lost that reputation. Let us not forget, also, that in London itself some of the most famous business scoundrels have flourished, and that even now it is full of operators of various kinds, whose predatory methods are simply those of the buccaneers of old, in modern form.

Nevertheless, it is impossible to deny that the standard of business integrity is stronger with the Anglo-Saxon than with the Spanish-American. The fame of British fair dealing is world-wide; it is bright in the past and the present, and God grant it may ever remain so in the future. The North American has partly inherited this British spirit, but, so far, it is much less developed.

Of course, in Peru, as elsewhere in South America, there is a class whose principles are as just as those of other communities. There are as honourable and cultured men of business, who are superior to these failings, and who are the first to regret the existence of such in their midst. Especially is this the case among the older families of the community.

The Peruvian of the *mestizo* class, the mixture of Spanish and Indian, is of a complex character. I have enjoyed, in the interior of the country, much hospitality in my travels from this class, which, to a large extent, forms the society of the smaller towns. There is intelligence and aptitude for acquiring knowledge with them; and avidity for contact with the outside world and for information of its events. This is sometimes coupled with the most primitive mode of living, and lack of ideas of comfort, or refinement in their surroundings. I have held discussions with such people, for instance, upon the works of Darwin or other authors with which they were familiar; but in spite

of this knowledge they had, I am convinced, not washed their faces for a week! I have had the history of England, or incidents in the Boer War, carefully expounded to me by men whose collars and other linen had remained unchanged for a long time; and I have often admired the facility of expression on current matters of individuals who had not shaved themselves for weeks: whose houses were unswept and dilapidated, with domestic arrangements such as would be impossible to the poorest persons in England. These people read their newspapers diligently, and it is largely from this source that they acquire information, for books are scarce. The leading newspapers of Peru are good in tone generally—of a certain order of literary merit, and they are the greatest educators that the country possesses at present.

The complex nature of the people of this class goes further. Sometimes, while showing me every courtesy, and enlarging upon the importance of the fact that a traveller should be engaged in scientific examination of the country and its resources, they have cheated me over the price of hire or purchase of a horse, and, on some occasions, borrowed money from me which it is doubtful if they ever intended to refund. It is at such times that one turns from the easy veneer of their politeness, and wishes it might be replaced by more solid characteristics. Of course, it may be urged, that promiscuous borrowing and chicanery over horse-dealing and other matters are by no means unknown in London, or elsewhere, and I can only soften the above criticisms by admitting the fact.

It must be recollected that these small interior towns are very much cut off from communication with the outside world; the people are poor, and the temptation to make a little profit out of the occasional traveller is strong. If the traveller is philosophical he will place the advantages he receives from these people—who are really under no obligation to serve him—against the small matters which arouse his spleen, when he will find that the balance is on his side. There are rarely public conveniences in these places, such as hotels, or means of conveyance, and the traveller

must recollect that he is making use of private resources, without which he would be unable to travel, unless he had carried everything in the nature of tents, beasts, and equipment with him.

But, apart from all the allowances which he may make for these failings, on the part of the inhabitants, it is strongly borne upon him to ask himself: "Why is it that the dwellers of this land are so different to the peasantry of Britain or Europe?" Why is it that those characteristics of simple honesty and other pastoral virtues of the country-side of his own land are so often lacking with these people? For these, whether they are of the lower class *mestizo*, or whether they are purely Indians—and the latter form the bulk of the population—have nothing of rural simplicity in their constitution. On the contrary, they are exceedingly *vivo*—a term which may be translated as *sharp*, and which often has a less mild signification. As bargainers they are extremely shrewd, and, as regards the Indians, the dominant note of all their dealings is disconfidence—*desconfianza*.

These unlovable characteristics are due to several causes. As far as the Indian population is concerned, they have grounds for their disconfidence. These Indians have been cheated, oppressed, and deceived, ever since the first Spaniard set foot in the country; and in many cases the Peruvians of the present day have followed very similar methods with them. They have been made to work, in earlier days as slaves, when they were held cheaper than cattle, and later for pay, out of which they are often cheated. During the frequent revolutions, which in the past century have succeeded each other in the country, they have been abused, and their goods taken by the military. Nothing inspires such fear and disconfidence among them as the appearance of soldiers. I have sometimes approached one of these small Indian villages with my men and pack-mules, when by some reason the inhabitants have mistakenly supposed that we were *militaires*. The women have scudded like rabbits to their burrows, to regain their dwellings, and the male inhabitants have received me in sullen silence. This, however, has vanished on finding

that it was not an officer, but an *ingeniero* that had arrived; and it is very noticeable that a foreigner is treated with more cordiality than would be accorded to one of their own countrymen.

The Peruvian of the upper class is well educated and companionable. Probably he looks on life from a less serious point of view than the Anglo-Saxon; he certainly appears to extract more enjoyment from it. His manners are often superior to many of the foreigners who visit Peru, and he, as an American, stands in sharp contrast with the American of the Northern Continent. The latter undoubtedly represents energy and enterprise, but the qualities seem often to require, or acquire, a most unsympathetic exterior; and the Americans who are now entering Peru—and there is a growing influx—do not generally reflect North American culture. However, this condition may not be too much criticised; the two classes can hardly be compared, for the Peruvian represents the best of his country, whilst the American in Peru is only the forerunner of a business element.

The Peruvians are an exceedingly polite people—too polite in some cases, according to British ideas. In walking along the streets of Lima, or on any fashionable promenade, the hat rests hardly a moment upon the head, as every male acquaintance is saluted by raising it. This constant hat-raising between men always strikes even the most cosmopolitan Englishman as troublesome and effusive, and he objects, as a general rule, to acquire the custom. Politeness is also greatly governed by class distinctions, and this is to be observed especially in walking. The Peruvian does not "keep to the right" upon the footpath, as generally observed in England, but it is considered that the more honourable place is the inside, nearest the wall. Observe a Peruvian gentleman passing along. He meets an acquaintance who is—in his opinion—his equal or superior in social or official position. Behold the polite raising of the hat, and the insistence that the other pass him on the inside. Sometimes they will positively dispute as to which shall take the inside.

A little further on he meets some one whom he may or may not know, but whose dress proclaims them, woman or man, to be of a lower social status than himself. He immediately passes him upon the inside. His course, therefore, along the pavement is a sinuous one, winding in and out, according to the individuals he meets, and might almost be described as a curve representing grades of social standing. This same custom also prevails amongst ladies, and it is quite painful sometimes to observe two women passing each other, when both may consider themselves entitled to the inside. They glare at, and sometimes even stop and confront each other for a moment. Having made this criticism, however, it must be recollected that such methods are not peculiar to Peru or Spanish America; they are found in Germany and France often, and even Englishmen are exceedingly touchy upon these matters on some occasions.

On the other hand, also, Peruvian politeness often comes from kindness of heart; and they are a charitable people towards their poor as regards almsgiving, whilst their bearing towards foreigners is kind and hospitable.

As regards international matters, the Peruvian has not yet a just sense of proportion. It is hardly to be expected that he could have this—few Spanish-American countries have it. The strong sentiment for and adoption of French ideas and methods, which formerly obtained in Mexico and similar countries, has been equally marked in Lima, and has stamped itself strongly upon the community. But this is rather giving way before what might be termed the Anglo-Saxon advance.

For a space the model appeared to be the United States. Every one pointed to the "Yankee," as the North American is generally termed (not in an offensive way); and American methods and civilisation were often spoken of as "the first in the world"—the untravelled American's estimate of his country. It was also hoped that the United States would intervene in the question of Tacna and Arica, between Peru and Chile, in favour of the former. But a natural reaction seems to be taking

place; and Peru, in common with other South American countries, sees that her big neighbour of the Northern Continent offers nothing superior to the more cultured nations of Europe, and that her true interests lie in the cultivation of a world policy, and not a "hemispherical" one. The Spanish-American youth educated in the United States is not a happy product. London is the real home for the cosmopolitan refinement suited to their character. Also, American capitalists have adopted exceedingly high-handed methods in control of interests in Peru, which have opened the eyes of Peruvians to the necessity for an equal balance of things. Nevertheless, North American enterprise will be a useful element for the Peruvians, and they will rightly try to adopt the methods of earnest work and scientific progress of the North Americans. But they must refrain from grafting the evils of that country on to their own stock. The Spanish-American has inherited a natural refinement of manner and certain ideals; it would be a serious error if, deeming these antiquated, he should strive to adopt the less pleasing social traits of the American of the United States; or the growing evils of that country's social organisation. The Peruvian loves to be considered a gentleman—Don Quixote flourishes in Peru—and he will far more carry out his word as such, than his obligation as a business man. Appeal to him through this higher sphere, and all may be well; treat with him only through the other, and you will be mistaken if you expect the same methods as an Englishman would use. Firmness must be an adjunct of politeness in Spanish America, for it is to be recollected that the Spanish-American sometimes shows that "oriental" trait, product of an inferior civilisation (whether in nations or individuals), of mistaking patience and courtesy for pusillanimity, and he has, also, something of the Oriental's admiration for successful guile, rather than an abstract love of truth.

But the Peruvian gentleman is certainly hospitable; his old-world courtesy is graceful, and his customs and institutions, even if they are at times a bar to his country's

progress, preserve for him a certain element of refinement which, once lost, is hard to regain.

The better-class Peruvians are of marked European physiognomy and stature. Peru, it is to be recollected, was in South America, as was Mexico in North America, the chief seat of the Government of Spain in colonial days, and naturally Spanish culture grew around Lima as a centre. Indeed, a certain pride of birth is marked among the upper class in Lima and others of the other principal cities of Peru: a pride which, whilst maintaining a species of aristocracy after the European manner, is partly responsible for the strong distinctions of classes, and the lack of social development consequent thereon. The learned professions are much sought after, especially that of the law, which is often the vehicle to political posts The cultured Peruvians are scientific, musical, and artistic in their tastes. They are always picturing and striving after great ideals, and, as elsewhere commented, this characteristic may be a valuable element in the future.

The Peruvian woman of the upper class is generally handsome. It is a matter which the observer cannot fail to note, that out of the large number of their sex which he encounters, on the streets or in places of public amusement, as the *plazas*, the racecourses, and the promenades, or in the churches, so large a proportion are attractive in face and form. This is possibly one of the features engendered of small communities. It seems to be the result of a sort of natural selection, many generations of breeding, and marked *régime* of refinement of a certain nature. For these ladies are principally of a leisure class, and the matter of personal appearance is, at any rate until they reach a certain age, the most important which enters into their lives. But their beauty is not either artificial or fragile. The most expressive eyes and a wealth of splendid hair, a singular power of expression in the glance and language; the full, ripe lips and the elegant figure, sensuous in its curves and grace of movement, all strongly arrests the visitor's attention. To the foreigner the women are exceedingly attractive; and they beam so indulgently upon him that

really only a heart of marble could fail to be influenced by their magnetism. Their manners are distinguished, and they have the reserve and the culture inherited from Spanish custom; and they are "womenly" women, such as make the life of homes. Like all women, and especially those of America, be it North or South, they are more refined than their men. Their attractions are—for their different type—in nothing inferior to the women of North America, and they are more lovable in that they still occupy that proper domestic sphere, from which their Northern sisters seem desirous to emancipate themselves: and to which the latter will have some day to return!

Notwithstanding their customs of seclusion and their strict Roman Catholic creeds they cordially welcome the "heretic" foreigner. I remember those flashing eyes, and the half-suppressed frankness of their owner's conversation, and with what satisfaction have I conversed with them in their expressive language. I have in mind three sisters, nieces of a past President, whom I knew well. I remember once telling them that love—for conversation runs largely on this theme—is only a "secondary passion," coming after the love of science and nature. How indignant they were—saying that Englishmen had no hearts, and that they had heard that they were cruel to their wives! And then, when referring to some religious processions that had taken place, I asked them why they tolerated those "stupid wooden images" and absurd old customs of the priests, they pretended not to forgive me. The criticism as to the wooden images, etc., I had not made in pointless rudeness, but purposely, for it is sometimes necessary, in order to know the real sentiment underlying habit and customs, to probe through the surface of ordinary conventionalities.

As stated elsewhere, anything pertaining to their Church is much reverenced by the women in Peru. This sentiment, of course, is not peculiar to Peru—it is general to all nations; but there is no doubt that there it is, as elsewhere, largely due to custom, and that change may affect it.

Peruvian ladies are, in conversation, bright and

vivacious; they are often fond of light badinage. But what is most strongly noted by the Englishman is the comparative freedom with which they discuss matters pertaining to the relations between the sexes, such as would hardly form subjects of conversation in Britain. It is not to be supposed that this is due to any loose method of thought, but only from a different point of view, which sees no wrong in natural matters, such as false modesty among English people would cause to avoid. For example, if it is necessary to mention in conversation that a lady is *enceinte*, the fact is not covered up or suppressed. Divorce, or matters relating to the domestic affairs of their friends, are frankly discussed, as of ordinary subjects coming under notice. This partly arises from a less serious view of life than is held among Englishwomen; and there is, in spite of their exacting religious ideals, less real reverence, or rather more familiarity, touching the Divine Persons of their creed. For instance, the first ejaculation of surprise which rises to a Peruvian girl's lips is "*Jesus!*" or "*Dios Mio!*"—terms whose equivalent in English are not so used. It is not meant to be so, but it strikes the Englishman as irreverent.

To foreign eyes the Peruvian woman, or at any rate the Limeña, is over-dressed. She enhances her charms by too costly apparel, and appears in the streets, the restaurants, and the promenades in dresses that in England would scarcely be found outside a ball-room. It must be taken into account that the climate of Lima is very mild; changes of temperature are very slight throughout the year; there is no real winter, and rain is almost unknown. This condition permits a method of dress which would be impossible elsewhere. Nevertheless, there is no doubt that in common with women of most races, the women of Lima are often prepared to sacrifice their health to their vanity; and even on chilly or misty evenings these fair butterflies of fashion will be seen in their light costumes, without outer wraps: presenting a curious contrast to the husbands,

brothers, or friends who accompany them — protected from the misty weather in overcoats, with the collars turned up!

For a Peruvian girl all roads lead to, and all hours culminate in, the day she marries. She loves with greater facility than an English girl—that is, the apparatus of her heart is earlier and more easily set in motion, and she is less exigent of real or supposed perfections in the man who adores her, and whom she accepts. Her charms and graces—and she has many—are meshes in the subtle net she ever weaves within her waking hours; and when the net has involved the object aimed at, the crisis of her existence is past. Once she becomes a mother she seems to lose her love of self-adornment, and rather lets those charms she formerly possessed lapse into disuse. She becomes a loving and careful mother, but with little object in life save the rearing of a more or less numerous family, and is to English eyes too much of a slave to its growing exigencies. And as her daughters grow up she seems purposely to endeavour to form a background of less interesting contrast against which stand out the charms of the new generation of sylphs of whose being she is the author. Indeed, the Spanish-American lady does not seem to be possessed by the desire to preserve a perpetual—but artificial—youth, as among the women of some other nations, but accepts more naturally the decree of Providence in the necessity for growing old.

She paints and powders less than Spanish-American women of other countries, but shares the custom of the race in hygienic matters and seclusion; and there is no doubt that the fault of not taking exercise tends towards an earlier fading, for beyond the limits of the polite *paseos* she rarely goes out. The custom of taking vigorous walks or pursuing out-of-door sports, so much a part of English life, is unknown to the Peruvian girl, and beyond the social functions of her circle her chief distraction and constant daily occupation is the attending of mass. Whilst it would be unjust to insinuate that this frequent attendance at temple has not

at base a religious motive, nevertheless, there is no doubt that if all the temples were closed her chief distraction would be gone.

The girls of Lima are, in spite of their attractions, too pale. This is due, principally, to the mild and non-invigorating climate of their city, whose effects they do not endeavour to combat by more exercise, or more frequent changes into the splendid and bracing air of the uplands of the Andes. The women of the towns in these higher regions are far more robust, and in their faces glows the healthy tint of wet winds and brusque and tonic temperatures.

But this paleness is considered a special mark of beauty, and is really prized. It marks the difference between the "coast" and the "sierra," for, be it known, the inhabitants of the capital, and indeed of the coast towns generally, consider themselves much superior to those who are of the uplands, and this pallor carries with it a species of guarantee that its bearer has little of the disdained Indian blood in her composition! This is the "colour line" of Spanish America, and it is stronger in Peru than, for example, in Mexico; and if the pallor does not exist by reason of Nature's beneficence, it is often produced artificially by the use of powder.

This social superiority which the dwellers of the capital arrogate to themselves over those of the Provinces is perhaps a quality of all Latin nations, and in Peru has probably resulted from the adoption of French ideas which took place in South America during its earlier development. It is an "idealist," rather than a "positivist" sentiment. Every Frenchman is supposed to have come from Paris.

On one occasion I almost offended a Peruvian lady—inadvertently, of course—by asking her in conversation when she intended to return to her native town in the interior. "Señor, I am a Limeña (a native of Lima)," she replied haughtily. I had been under the impression that she had been born in the interior, at a beautifully-situated little town at the foot of the Andes, and which I had

just visited. But I obtusely refused to understand the distinction.

To sum her up as a mental impression the Peruvian woman, or lady—for she is always the latter, as I have explained elsewhere—forms a gentle and refined picture which lingers pleasingly in the foreigner's mind. She deserves the best that heaven may afford her: she is among the fair ones of all the fair women of the New World.

Photo] LIMA: THE CATHEDRAL. [*N. P. Edwards*

CHAPTER XXX

LIMA

THERE are several cities in South America which have arrogated to themselves the term of the "Paris of South America," but I have not heard this claim put forth by the people of Lima for their city, although doubtless she is as much deserving of the title as some of the other cities.

But that idea of centralisation, which would attribute all the importance of a country to its capital, and which prevails among Spanish-American nations, is very marked in Lima. There exists a saying among her inhabitants to the effect that it were "possible to die of hunger in Lima; but not to leave it"! And this idea is noticeable in the characteristics of the Peruvian men. I have sometimes met, in the interior towns, young men from Lima who had ventured forth on some Government errand. But alas! for their peace of mind. They sigh only for those distant "flesh-pots"; they are strangers in a strange land, and only support existence until such time as their exile may terminate.

Lima is a pleasant and attractive city, handsome in many respects. There are certain advantages about communities of this nature whose size is not unwieldy. For example, you can easily meet all your friends every day, if you so desire. You have only to enter the clubs or principal restaurants at certain hours, and there they are. There is nowhere else for them to go; and you can run a man to earth within half an hour, at most, in one of the usual haunts. Of course there are disadvantages, such as the fact that in this sort of "large family" to

which society is reduced to in such conditions, everybody knows everybody else, and jealousies and estrangements sometimes become strong between rival members of the community. However, it must be remembered that such conditions are not unknown in England. The society of English country towns often leaves a good deal to be desired from an ideal point of view.

One of the most marked conditions which the traveller observes among those countries which have a republican form of government is the fact that true democratic principles and methods are less in force than in monarchical countries. The louder and more peremptory is the cry for "freedom" and for "liberty, fraternity, and equality," the further are they removed from the practical exposition of these qualities. Nature at times seems ironical; to the too exigent she yields the semblance, and withholds the fact.

There is nothing about the actual working or condition of any republic, be it Anglo-Saxon or Latin, which is in advance, or even at the level of such countries as Great Britain. The evolution of self-government in South America seems slow, and Lima has been no exception to the condition. It is ever the difference between the ideal and the actual; the laws are excellent, but they are not always enforced. In a Commonwealth, class distinction should tend to fade away; in no communities of the Old World are these distinctions more marked than in Peru and her sister republics. The *res-publica* (the public things) are not public; they have never been so; they have been arrogated by the few to their own enjoyment, and are still held in monopoly. Pride of caste is exceedingly strong, and brings with it those conditions of contempt of work and love of luxury which a young community can ill afford to indulge in. The high silk hat, the fashionable black frock-coat, the patent leather shoes, and the gold-headed cane, are in sharper distinction to the labourer's apparel and the beggar's rags in these "republics" than in the monarchies of the Old World.

It always strikes the Englishman that a rigid course of rough tweed suits, thick-soled boots, and long tramps over mountain lands would be exceedingly beneficial to the polite youth of Spanish America! Would it be possible in an Anglo-Saxon community, that young men, enjoying health and wealth, should pass their days in fashionable idleness and their nights at the billiard and card tables, whilst upon their country's maps are inscribed the words "unexplored territory"? And this territory is but three days' journey from the billiard tables and the fashionable bars!

There are, of course, some among the Peruvians who possess the true spirit of enterprise and exploration, but they are few. Some of them have done good geographical and scientific work. The Geographical Society of Lima is a most valuable institution, and is carrying on work of much importance. No mention of Peruvian geography can be complete without associating the name of the famous Raimondi, *savant*, explorer, and geographer of the last century, who laboured so diligently to map and explore the country. I have spoken elsewhere of his work.

Also, the Society of Engineers of Peru is an institution of the first value. Still more important is the Engineering School, which is directed by the Government, and which turns out numbers of young engineers. These, after having concluded their studies, are appointed by the Department of *Fomento*, or Public Works, to investigate and report upon the mining regions of the interior: so that an accurate knowledge is now being obtained of them. The expenses of this body are defrayed by the taxes paid upon mining property. There is no doubt that this is a wise institution, and by its means well educated young men, who generally have no other resource than those which their work gives them, are beginning to make known the rich and extensive territory which is the heritage of their country. The credit of having set this institution on a firm footing is due to one of the recent Presidents of Peru, Señor Romaña, who

was himself an engineer, educated in England. Other useful institutions in Lima are the Sociedad Nacional de Mineria, the Sociedad Nacional de Agricultura, and the School of Agriculture, which are engaged in fomenting these respective industries. There are many other scientific institutions in Lima relating to the various professions.

As regards its general aspect, Lima is pleasing and well ordered. It is built on the usual plan of Spanish-American capitals, and the buildings are generally of the type common to these cities. From the *plaza* run the main streets, intersected by the cross-streets after the well-known "gridiron" plan. The blocks so formed are about 100 metres square. The houses are sometimes of one, generally of two stories in height. Some are under construction of three stories, but the streets are not wide; and such a system, if continued extensively, would shut out the light and air, and spoil the appearance of the city.

The buildings are generally constructed of brick and adobe; upper stories are often of lighter structure of wooden scantlings filled in with other material. High buildings are not only unadvisable from an æsthetic point of view, but dangerous, on account of earthquake shocks, which must always be reckoned with.

The main *plaza* is always a pleasant feature of these cities. It is the pulse of the whole community, in a sense. One side is occupied by the Cathedral, another by the National Palace, where State functions are held; whilst hotels, clubs, shops, and Municipal buildings, etc., occupy the remaining portion. The enclosed area is beautifully planted with flowers and shrubs, and a fountain plays constantly in the centre. On certain evenings during the week a band performs. But it is not the fashionable class who attend. Indeed, no one of the *élite* is ever observed there; it is a function which, however, gives vast pleasure to the lower middle class, and to the *pueblo* or working class. Here the happy populace promenades, drinking in the music, the scent of the flowers, and the mild evening air.

The fashionable promenade of Lima is the new and handsome *paseo* or drive of Colon. On Sunday afternoon a band plays here, and all the youth, beauty, and wealth of the city attends, some in carriages, some on horseback, but the greater part on foot.

There is always a certain glamour of historical interest hanging over the capitals of Spanish America, especially of such countries as Peru and Mexico, which were the principal centres of Spanish Government during the Colonial period. There is something charming and restful about the old-world houses with their balconies and *patios ;* something romantic and interesting in the secluded air of their barred windows and the quiet streets upon which they look. They are the antithesis of the manufacturing towns of other countries—and may they ever remain so!

There is nothing of the rude struggle for life so palpable elsewhere, especially in North America ; and nothing could be more removed from the blatant roar, the glare, the vulgarity of too many of the cities of the United States : the unlovely necessary condition or phase through which Anglo-Saxon communities seem bound to pass, and which they must lose as real civilisation advances.

Lima, and her sister cities of Spanish America, will err much if they strive to eliminate from their midst their manners and architecture. These are the gifts of their progenitors : they are the work of time, and must not be hastily cast aside for the adoption of other methods which are assigned by destiny to be the attributes of other nations.

CHAPTER XXXI

LIMA—*Continued*

THE City of Lima looks well, as from the approaching steamer's deck the passenger beholds it from afar. It lies amid its green *campiña*, or cultivated lands, and the haze and atmosphere of distance swathes it in that medium of ethereality, that enchantment, which distance lends.

The steamers which unceasingly ply up and down the Pacific Coast — their long trajectory from Panama to Valparaiso, and from Valparaiso to Panama of more than 3,000 miles—are comfortable. The cabins are all on deck, for on this calm ocean such a type of steamer may safely exist. True, advantage is often taken of this reputation for calmness to load the upper deck with bales of cotton or other matters, which, did a gale arise, might cause the steamer to roll. But accidents are remarkably rare. Indeed, such is the security that there seems to have been bred a contempt, or rather neglect, of possible danger. On all the numerous voyages that I have made on these steamers, extending over several years, up and down the Pacific Coast, I have never seen drill of any description practised; and it is doubtful if, in case of fire or disaster, the boats would be lowered and manned in time for the passengers' salvation. Of course, these are coasting steamers, and are rarely out of sight of land, but, nevertheless, accident might be followed by disaster, and boat drill, such as takes place on the Royal Mail steamers on the east coast of South America, should be practised for the sake of prudence.

The necessity for quarantine, and its regulations on the Pacific Coast of South America, are exceedingly trouble-

some at times to the traveller. Whilst these regulations are, of course, necessary, they are unfortunately exaggerated in a retaliatory manner between the various Republics of that coast, at whose ports the steamers call. Chile quarantines vessels coming from Peru; Peru quarantines vessels proceeding from Ecuador or Colombia; and these all retaliate in kind whenever the opportunity presents, beyond the real necessities of the case. Now the North Americans, having obtained possession of Panama and Colon, make rigorous quarantine exactions against all these countries, and whilst American sanitary methods are good, and will have a good effect in South America, nevertheless the Americans are fond of red tape, and sometimes of petty officialdom and tyranny in such matters. However, as regards the Spanish-Americans, these numerous and prolonged quarantine regulations have their "useful" side: do they not give employment and pay, with an easy billet, to a number of doctors and political adherents? But intending travellers need not be alarmed at the matters of yellow fever and plague. These are quite benignant on that coast—especially in Peru and Chile; and the remedy is perhaps more troublesome than the disease.

The two steamship lines which perform a regular bi-weekly service from Panama to Valparaiso, calling at all ports on the coast, including Guayaquil, Payta, Callao, Mollendo, Iquique, etc., are, as before stated, comfortable and well-appointed vessels; and it is a tribute to British seamanship that all the Captains of this numerous fleet are Britishers, whether on the Chilian line or the English. There is not—or was not—a single Captain of South American, or, indeed, of any other nationality, among them. There is also a good German line: the "Kosmos."

The methods of debarcation at Callao for Lima, or, indeed, any of the ports on the coast, are not comfortable for the passenger. It would have been supposed that the steamer would dock, at least in the main ports, or that a launch would come alongside to take the passengers and their luggage off. Nothing of the kind. The steamer

anchors some way out, and is immediately delivered over to an army of bandits and buccaneers. That is to say, the boatmen and baggage men who swarm all over the ship, and seize passengers and luggage, are the only method of getting ashore. These good-natured bandits—for they are, on the one hand, very serviceable fellows—charge what they like on delivering up the baggage at the hotel; and if the passenger is not accustomed to their ways, they will get a pretty fee out of him. I once protested against this method to an official of the steamer, when he replied that he was obliged to permit it, as the steamers were under some regulation to anchor away from the wharf on purpose to give these boatmen a living. Personally, I rather like these picturesque and jovial bandits, but all are not of that way of thinking—or equally philanthropic.

The port of Callao is an important shipping centre, but not attractive as a town, and the visitor loses no time in going to Lima—about half an hour distant, inland—by swift electric car service. The electric system, it may be mentioned, is worked from a hydro-electric station on the river Rimac, which descends from the Cordillera of the Andes. Here electric energy is generated, and several urban and suburban railways are actuated and supplied therefrom, as well as the lighting of the city and adjoining watering-places on the coast. The company which inaugurated and maintains this enterprise is entirely Peruvian, no foreign element entering into it, so far, and is an example of good industrial development in Lima.

Callao has during its past history been terribly afflicted by earthquakes and tidal waves, as described in a subsequent chapter. In olden times it was often marked as the prey of foreign adventurers and buccaneers, for it was the principal port of embarcation for the gold and silver which came down from the interior, and whence well-laden galleons and plate-ships turned their prows for Spain, to fill the coffers of his Catholic Majesty, falling, occasionally and incidentally, into the maw of Devonshire adventurers,

such as Drake, and others, some of whose exploits I have transcribed from Spanish chroniclers in the following chapter. Plymouth was ever a favourite point of departure for explorers and hardy adventurers in those stirring days, and between Plymouth and Spanish America there is much historic association on such matters.

Peru is one of the few strongholds of Roman Catholicism remaining in South America. That is to say, that the cult of any other religion is illegal, and the Church belonging to the British community in Lima is only supposed to be allowed to exist by courtesy. It is, of course, never interfered with. But this toleration is not displayed in the interior of the country, and a Methodist or Missionary Society that was established in Cuzco has suffered repeated attacks from the fanatic clergy, and the people instigated thereby. There is no doubt that this clergy would, if they could do so with impunity, destroy by every means in their power, and with as much cruelty and intolerance, any rival religion which might be established there, in the spirit of the dark and bloody Inquisitions of old.

It is the character and principle of the Papist Church to persecute and destroy; not to outshine or become superior to its adversaries. I make this statement disinterestedly, for I am not pretending to advocate the advisability of establishing missionary or evangelical works among the Indians of Peru. It is quite doubtful if the unlovely attributes which sometimes attend Anglo-Saxon nonconformity would be desirable for, or could flourish in that soil. The Indian has had enough of "religion" during the centuries since he was first persecuted and murdered under the shadow and authority of the Cross!

The basis of the Roman Catholic religion which has been instilled into the Indian is sufficient. It has some good points, but requires purifying from temporal abuses, when it will serve as well as any other. It is the intellectual and industrial side of life of the unfortunate South American Indian which must be bettered—his social and

economic surroundings must be raised, and all else will follow. The religion of the Incas might have drawn the Indian on to civilisation; the religion of *Maria* and the priests, if freed from ignorance, abuse, and superstition, might also have redeemed him when his own natural faith was ruthlessly torn away; and to plant Anglo-Saxon nonconformity upon him now, or any other religion, would but exaggerate his troubles. His real well-wishers will strive to raise him socially, and Church missionaries, if they look to Peru—as, indeed, all South America—as a field for effort, should study this. Latin nations, it seems probable, have to pass through a reaction—from Papistry to materialism, and even atheism. When that phase is over—and it may be short-lived—then, on the wave of a new rebound, some chastened and philosophical Christianity or religion may be offered—such as even now begins to claim the attention of thinking men of all nations; the errors of their own Churches discovered and denounced.

In Lima the religious or Church feasts are important ceremonies, and the President, his Cabinet, staff, and the army, attend them. Picturesque and interesting they doubtless are, as they deploy in the *plaza* and fill the Cathedral. But it occurs to the foreigner who observes the unlimbered cannons, ammunition carts, and haversacks at Easter time, to ask, "What is the connection between mule-batteries and Jesus Christ?"—not in a flippant, but a philosophical sense!

These evidences of martial power, and these accoutrements of tyranny are more connected, however, with the establishing of "liberty" than of religion. Lima is the capital of the country, and it is, of course, here that the main struggle for the coveted post of President is waged. To speak of Lima and Peru is to speak of the whole of Spanish America, as regards political matter and changes of Government. The machinery of self-government in Spanish-American countries is theoretically good. Unfortunately in practice it lends itself to abuse, and is a standing example of how useless laws are to a community,

when they are not followed out, and how useless is their action if they are unaccompanied by morality in their administration. The kindest thing to say about self-government in these communities is that it has hardly had time to mature—that it is an excellent plant which strives to grow, but which is continually being pulled up by the roots. The race does not appear to be able to govern itself yet. It was probably too soon released from the influence of "Authority," or was unfortunate in not having been developed under a different kind of authority than that which Spain afforded. The real difficulty is not hard to see. When in a community all individuals are theoretically equal, it is naturally hard for some part of it to have to bow to some other part, which has by some means attained power of administration over the whole body. They are in the position of school-boys, or brothers, domineered over or bullied by their fellows, and who reserve the opportunity to punch the latters' heads at the earliest possible moment! The whole process is briefly as follows:—A number of politicians and military men—generally ambitious and unscrupulous people with nothing to do and a certain income—get together, and nominate a certain one of their number for President. He, in return for this, holds out to them the spoils of various offices. The "election" is held—if the word may be used in description of the method of bribery, coercion, and falsifying which takes place. The losing side, knowing that, had they been able, they would have defrauded, are perfectly sure that they have been defrauded, and do all in their power to oust the elected Chief, using arms, if strong enough.

Supposing, however, that the elected President and his followers control the army and are able to hold their own, the Cabinet, formed in many cases of the assisting Generals or other prominent supporters of the cause, sets itself to put in motion the machinery of laws and government. If, now, however illegal the methods by which they may have come into power, they would confine themselves to really endeavouring to employ this machinery for the good of the

community, they would succeed; peace would be established, commerce would prosper, and the country would develop along natural lines. The names of the President and his Ministers would grow to be respected, and would go down to the history of their country as "great patriots" —a term they are very fond of.

But too often they do not. Not content with what they may gain by their salaries or legitimate opportunities in office, they too often employ unjust and illegal means, and end by misappropriating the funds belonging to the country or diverting them in a variety of ingenious ways to their own benefit. Even if they would draw the line at a moderate amount of abuse, and still carry on the administration of the country in a broad-minded and liberal way, all would be well; but, as a general rule, they cannot. There does not seem to be much spirit of political generosity in the Spanish-American character, and their late opponents, instead of being won over, are harried and deprived of any opportunity to co-operate, whilst the adherents of these, or of a former *régime*, are, sooner or later, and on various pretexts, kicked out of any position they might hold — large or petty — and favourites of the governing power established.

What is the result? Exasperated by this treatment, the others show their hatred. They organise in protest, and a revolution is born; there is a hail of rifle-bullets, a rain of blood; public order has turned to public murder; perhaps they gain the day. General Blanco[1] succeeds General Rojo.[2] Viva General Blanco, the great Patriot! Down with General Rojo! Disorder and murder are again the parents of order and administration, but the exponents of these, bearing the inevitable stamp of their progenitors, develop the same features later on, and the same operation is gone through again and again. Occasionally a Dictator arises, however, who is able to accomplish something good, as witness Diaz, of Mexico.

During the last election in Lima I often took my stand in a balcony overlooking the *plaza*, to observe the rival

[1] White. [2] Red.

bands parading the streets. There was not much disturbance, however—not like that on a previous occasion some ten years ago, when gatling guns were turned on to the people in the balconies, and dead bodies were extracted therefrom days afterwards! For, as I have stated elsewhere, greater prudence and peace marks the elections.

From my balcony in the evening I hear the cries of rival bands of the adherents of one or the other candidates for Presidency. The candidates on this occasion are respectively Señor Nicholas Piérola and Doctor Jose Pardo; and feeling about them seemed equal so far. As I listen: a tumult suddenly sounds above the ordinary noise of street traffic. "Viva Pardo!" resounds from the *plaza* below. "Viva Piérola!" is immediately and hotly replied. "Pardo! Pardo! Pardo!" is the deafening answer, and "Piérola! Piérola! Piérola!" is returned with equal energy. The crowds move on, and their cries become fainter, but they must have been joined by other adherents, for a louder and fiercer shout of "Viva Pardo!" smites the evening air, and an answering roar of "Viva Piérola!" winds over the city and resounds from the Cathedral façade. "Pardo! Pardo! Pardo!" again I hear, and "Bang! bang! bang!" is the reply, for some one has fired a revolver. But only into the air, and the rival bands pursue their several ways along the side streets, from whence comes floating to my balcony the sound, softened by distance, of "Pardo! Pardo! Pardo!" and "Piérola! Piérola! Piérola!" The long and elegant leaves of the platanos, or banana plants, in the *plaza* stir softly in the faint air; the electric arcs above shed down their brilliance, paled before the rising moon behind the grim Cathedral tower; the figures of saints upon the parapet gaze stonily down, and the hurrying *gendarmes* and mounted soldiers have left to head off a possible disturbance upon a side street. All is peace below me, yet from afar, as I listen, again comes a faint sound—"Viva Pardo!" "Viva Piérola!"

CHAPTER XXXII

LIMA—*Continued*

PARDO gained the day, and at present fills the Presidential chair, wisely and judiciously, as was to be expected. Piérola was also a capable man, and sagely forbore to vent his disappointment in urging his followers to revolution. Neither men were *militaires*, and the Government is entirely a civil one. But feeling ran high, as where does it not during election time? As I was wandering about the city, in pursuance of my liking to examine things alone, I was suddenly confronted by a band of excited negro women. "Whom do you *viva*, Señor?" they demanded. Here was a dilemma. Personally, I had little choice or selection in the matter (although I rather preferred Doctor Pardo)—there was not much difference in the principles of the two contestants for Presidency, as both were pledged to civil government. If I had said, "Viva Pardo!" they might have been on Piérola's side, and discharged some over-ripe eggs in my direction; whilst if they were Pardo's adherents, and I said, "Viva Piérola!" the same thing might have happened. So, assuming a superior air, I said: "Vivan los Ingleses!" ("Hurrah for the Englishmen"); and they, seeing, of course, my nationality, burst into laughter and applause, and made way for me on the inside of the pavement.

Still further on a similar incident befell me. This time a group of rough-looking workmen asked, as they confronted me: "Whom do you *viva*, Señor?" To this I replied gravely: "Viva la paz, caballeros; Abajo la revolucion!" ("Hurrah for peace, gentlemen; down with

The President, Doctor José Pardo.

revolution!")—a sentiment which found echo in their breasts, for they cheered as I passed on.

The chief matters which occupy the attention of the present President and his Cabinet—many of the members of which are capable men—are principally those relating to the extension of their railway system, and which is perhaps the most important of all: those relating to the improvement of the indigenous race of the country, and those touching the matters of boundary and frontiers with their neighbours. Another long-outstanding matter is that of the settlement of a question with a British Company which controls the railways of Peru, and which is known in financial circles as the "Peruvian Corporation." This Company took over the responsibilities of Peru's debt some years ago, receiving in return the administration of the railways and their earnings, with certain concessions relating to guano, and also lands in the Montaña. The relations between the Peruvian Government and this Company have been far from happy, and efforts are continually being made to adjust them. It is not intended here to form any judgment on the matter—it is a delicate question, and only its general circumstances will be stated. The Government in the agreement between them and the Company, agreed to pay the latter a large sum of money per annum; whilst the Company, for its part, agreed to construct a certain number of miles of railway yearly. Neither has fulfilled its part. The Corporation alleges bad faith against the Government, and the latter retorts that the Company has slandered it abroad and prevented foreign enterprise coming to the country. It was certainly a large amount of money to expect a poor country like Peru to pay, and probably the original basis and antecedents of the affair are to blame on both sides. Be it, however, as it may, the disinterested Englishman can only regret that so splendid a field for industrial enterprise as Peru has been neglected, partly from this cause. The Company might have controlled an Empire, and its riches might have rolled into

their coffers. Even as it is they reap a good return from the operation of the railways.[1]

As has been stated, the machinery of self-government in Peru is good theoretically, but there has not been time, nor is there always disposition, for it to acquire stability and progress. Peru embraces a great territory—several times the size of Great Britain and Ireland. For its administrative ends it is divided into sections, but has not been able to obtain or dispose first-class elements for administrators, especially away from its capital. The political organisation is composed of three elements: first, the Legislative power, as embodied in the Senators and Deputies of the various Provinces or "Departments"; secondly, the Executive, as represented by the President and his Cabinet; and thirdly, the Judicial, consisting of the Supreme Court and Judges of First and Second Instance. There are twenty-one Departments, corresponding to states, or shires in other countries, which are subdivided into provinces, and again into districts. The heads of Departments are termed Prefects, those of Provinces Sub-Prefects, and of Districts Gobernadores. Of these latter there are about 790—a formidable number—and who, although surbordinate to the other powers, come more into contact with, and are more able to influence, for good or evil, the population among which they live than the higher officials. It is these petty officials—the Gobernadores—whose standing and calibre must be raised before much improvement can take place among the Indian population of the country. The Government should establish a special "School" of Gobernadores. They might invite young Englishmen or Germans to fill the posts! They could offer unlimited land as recompense, but probably no salary; and it is certain that the Peruvian of the better class will not leave their cities to undertake the work, even if he were of a character such as to successfully perform it. The best governing nation in the world is Great

[1] This question is now under settlement.

Britain, and her Colonial methods should be studied by the Peruvian Government.

The buildings of Lima are, among the older ones, picturesque, but the modern structures, like those of Spanish America generally, run too much to stucco and plaster. Is it the mark of an evanescent race not to build solid and enduring structures of stone? Around Lima are splendid granite quarries: why should they use adobe and stucco? In the main *plaza* a grand new national palace is projected. This will probably be of the bastard classic style imported from Europe or the United States. Why should not the Inca order be adopted? Those buildings endure for ever, and are in great part, it seems to me, the result of an adaptation to environment in architecture—the environment of continual earthquake shocks; for the solid blocks and thick walls of their single-story structures have resisted seismic disturbances, and seem to have been dictated by a study of Nature. I make the suggestion in a kind spirit, and trust to be pardoned by the Peruvians these criticisms of their own affairs, which have protruded themselves into these modest chronicles.

One of the conditions which most arrests the foreigner's attention in Lima is the enormous number of lottery ticket-sellers. It looks, at first, as if a large part of the poor population gained their livelihood by this means—a non-productive occupation which calls to mind the community spoken of by Dr Johnson which "lived by taking in each other's washing"! for the buying and selling of lottery tickets hardly seems conducive to any measure of production or wealth. At every step tickets are offered you, not only by the wastrels of the population, or the old and decrepit, but by able-bodied people, and scores of young children. They infest the streets, hotel entrances, shops, and offices, and thrust their flimsy wares into your face as you pass along, with their eternal cry of, "Hoy sale la suerte!" ("The lottery is drawn to-day"); or, "Para la tarde diez mil" ("Ten thousand pounds this afternoon"), and so forth. What

miserable commission they gain upon their sales I do not know, or how they live or clothe themselves. Poorly, judging by the appearance, for, as to the old men and women sellers, they seem to be those flotsam and jetsam which the tide of life has cast, useless for aught else, upon this final "beach" of occupation. Of this nature was an individual who almost daily pestered me to purchase tickets as I left my hotel. I even found him at times at the entrance of the club, waylaying me with a persistence worthy of a better occupation. "Do but buy a ticket, and your fortune is made," he implored; and really he seemed more animated by the desire to make my fortune than of selling his tickets. One day I became impatient. "Do not trouble me any more," I said, "or I will hand you over to the police; I never buy lottery tickets." The poor fellow stopped abruptly, as if hurt. He was probably a little dazed mentally, and I examined him by the light of the electric arc which swung above. An old frock-coat, tightly buttoned about a shirtless body, and ancient boots upon sockless feet, as evidenced by the suspicion of human leather protruding from gaping holes therein. An old man, unshaven and hungry-eyed, yet with a certain air of reserve or pride about him—a type of most pathetic poverty. He told me his story. He had been a Government employé during a past *régime*—a Prefect, or Sub-Prefect, quite an important position—but a change of party had deprived him of his post; an ungrateful Government refused him other employment, and he had drifted to indigence and the selling of lottery tickets. I had taken him to a restaurant on a side street to appease the hunger which he said devoured him, and learnt that his only remaining desire in life was to present a certain petition to the Government about some matter. "But," said the poor old fellow, "I cannot enter the palace, for the sentinels at the entrance would not let me pass in these clothes." It was certainly pathetic. Here was this man, who had commanded soldiers and policemen formerly, who had been "one in authority," and at whose word of "Do

this" it had been done, now unable to obtain audience. I gave him an old shirt, a collar, and a black coat and hat which I no longer used, and promised to meet him on the morrow to conduct him past the *gendarmes* at the palace entrance. So it befell. I hardly knew in the old ex-Prefect the wretched lottery ticket-seller of yesterday. His figure was upright, he had been shaved with the few coins I had given him, and was now as dignified as in prefectural days when he had haughtily ordered his inferiors, in some interior city. The entrance to the palace is, of course, free to the public, but in any case there would now be no need of my accompanying him, for he strode towards the entrance with commanding mien, and—could the poor fellow's cup of happiness be fuller?—the soldiers on guard at the portal actually saluted as we passed! Moreover, the confidence in himself which he regained from this bore him on to the interview he desired; and, as he afterwards informed me, he positively obtained a small post in a Custom House, which would keep him in comfort —a post too insignificant, fortunately, to be marked as the prey of any more influential political adherent of the governing power. Truly the way of the discarded politician is hard, in the free countries of the Americas, from Tammany to Peru!

I have before described the characteristics of the Peruvians. They, like all of the Spanish race, are exceedingly eloquent; they have great facility of expression and gesture, and a remarkable flow of words. When a speech is made, whether it be at a banquet, a political meeting, or a funeral, the orator performs such an oration as, translated into English, could only be described as "magnificent." Such a flow of words, however, is foreign to Anglo-Saxon customs and ideas, for both our words and ideas are more brusque, succinct, and to the point than the Spanish.

I have attended meetings on quite ordinary occasions, when the speakers have gone far back into remote classical history for similes to illustrate their argument or

speech. They do not seem satisfied unless they have invoked old philosophies and ancient truths to support their contentions; and the flattery or adulation of a friend or colleague, or the denunciation of an enemy or opponent, are correspondingly exaggerated. A successful general or statesman is nothing less than a Cæsar, whilst a political adversary is dyed with all the wickedness of the human race! In Spanish a gentleman is always "a perfect gentleman"; knowledge is always "profound knowledge," and so forth. But I will give some illustrations of this eloquence, so that I may not seem to be unkind in this criticism. Here is part of a speech which I will translate from the *Comercio*, one of the leading papers of Lima, on the occasion of a funeral:

"Gentlemen! A most dolorous duty causes us to congregate around this frozen trench, too early opened to receive the mortal remains of an unfortunate companion, whose existence, although it has been short, passed with meteoric luminosity, leaving an illustrious and translucent after-glow. . . . Even as the varied and beautiful lines of the spectrum through a converging lens are transformed into a faggot of white light, resplendent, so the details which in his work he compiled, united, and synthesised, emerged afterwards from his brain in the beautiful production whose merit is sufficient to place his sarcophagus in the temple of immortality. . . . If the disassociation of the matter which constitutes this scheme of the human body carries not with it the destruction of personality; if an immortal spirit survives, transmigrating or ascending in infinite spirals to the bosom of the Creator, then thy death is not death but transformation, a mere change of existence itself! The chrysalis, it is true, has broken its envelope, and the mysterious butterfly—the adorable psychic entity, has flown to happier regions, to merge itself into the Prime cause. The spirit, spreading like the undulations of the ocean, or engrossing some hierarchical choir in the serene region of souls" . . .

and so forth: words of excellent meaning if embodied as an essay, but hardly in place before a mixed multitude at an ordinary funeral.

Here is another, relating to a marriage, which I cut from the *Prensa*, a leading paper of Lima, and which is one of a common form of such insertions.

"Nuptials. The virtuous and angelical Señorita Fulana has united herself for ever with the perfect gentleman Señor Sutano. In view of the characteristics of so sympathetic a couple there must ever shine upon their hearth the star of felicity, perfumed by the delicious ambient of the pure and virgin love which dwells in the innocent heart of the spiritual spouse. May the sun of happiness radiate always in the blue heaven of this marriage, is the vehement desire of those who, full of rejoicing with this felicity, sign themselves—their friends."

These marriage notices are, really, in most cases, inserted by the interested parties themselves!

And here is part of an oration composed and read by one of the prisoners in the Penitentiary, on the occasion of a visit of the President of the Republic to that institution:

"Extend, most excellent Sir, your most worthy attention, and you, venerable representatives and honourable magistrates, and all the justice that surrounds you. Now that the hour has arrived for your Excellency to visit this lugubrious penal establishment, I will give expansion to my troubled spirit, to expose the justice of my plaint, to your Excellency, who comes as a synonym of goodness, who comes as a redeemer to redeem the worthy, who comes as an apostle of humanity to console unfortunate beings such as I. . . . I am a victim of calumny, and therefore my pure conscience gives me valour to present my plaint before you. I would I had the eloquence of Esculapius, to address you in learned phrases. . . . Give your benevolent acceptation of the fruits of my poor inspiration. . . . It would seem that Phœbus has kindled the Aureola of his torch to send here more brilliant discs this day, but alas! it is not continuous; a dark and desolate mantle will cover this sepulchre of vicissitude . . ." and so forth.

It is far from my intention to hold up to ridicule this characteristic of verbosity. I only cite it as a psychological quality of the race, for it is innate; the poorest and least educated among them strives for oratorial effect, as well as the educated and the scientific; and as I have remarked elsewhere, this idealist quality may contain some valuable attribute which in later development shall stand

them in good stead. At a time when some branches of the Anglo-Saxon race seem to degenerate into acquiring mere money-gaining, trust-forming, and usurious customs, it is not wise to despise anything in other races of an opposite nature.

The Spanish language, also, it is to be recollected, is very different from the English, in that the short, succinct terms we use, from the Saxon, have their equivalent in Spanish, in long and high-sounding words; and the language of even the poorest classes in Spanish America, when translated into English, is of a calibre such as would only be employed by an upper class in England or the United States.

Another trait of the Spanish-American, which to Anglo-Saxon eyes approaches somewhat the borderland of pathos (or bathos), dwells in the striving for the expression of great ideas regarding liberty, equality, and the like—grandiloquent theories which they are unable to consummate. Here, for example, is the title and heading of a provincial newspaper in Peru:

"LA RAZON (REASON)
LIBERTY, FRATERNITY, EQUALITY, MORALS,
WORK, PROGRESS!"

The small and obscure sheet bearing this title would probably contain, as principal news, the publication of some Government edict; an account of some barbarities committed by the petty authorities upon the Indians, or the doings of the most aristocratic family of the place.

The city of Lima enjoys a good climate, as I have stated, has many points of attraction, and is eminently cosmopolitan. In Peru, notwithstanding its small population, the number of foreigners to be encountered is considerable. Italians predominate, followed more or less in their order of numbers by Austrians, French, Germans, Chinamen, British, and Americans.

The Chinamen are principally the remnants and descendants of those who were brought into the country

years ago to work the sugar-cane plantations. It is very doubtful whether the Mongolian is a desirable citizen, for physically he tends towards deterioration. He is of generally weak frame, and his features are certainly not stamped with intellectuality. The native Peruvian generally despises him, and he is described as *raquitico* and degenerative. It is also very doubtful if his progeny survives, for, although he may have one, or several female companions of the Chola class, who bear children freely, these latter do not appear to live to attain a ripe age. The Chinaman is generally a small shopkeeper, or keeps a small laundry, and at times maintains *fondas* and small "hotels" in the interior towns. He is not without useful qualities, and enterprising to a certain extent, and soon acquires the language of the country. Indeed, in some small towns the business of shopkeeping is almost monopolised by Chinamen, for they appear to work towards some mutual method, helping newcomers of their own race to establish themselves. But there is no doubt that they largely falsify and adulterate the goods they sell, whenever such is possible. The Chinaman, moreover, is full of abominable vices, and the country would be better without him.

The British element in Lima is confined principally to several large commercial houses, branches of main London establishments, and their chiefs and employees. There is no large British Colony, as in Iquique, for example; and with the exception of a little desultory mining here and there, British capital has not yet awakened to the possibilities of Peru as a field for investment. The railways of the country are worked and controlled by a British Corporation, and I have spoken of this elsewhere. But if there are not a great many English people in Lima, the British name and reputation for fair dealing is respected.

The adjoining Republics of Bolivia and Ecuador are included in the same British diplomatic representation as Peru. Relations with Bolivia have only recently been renewed—about two years ago—for these were summarily cut off, it will be remembered, many years since, due

to an incident which took place in that country. The following relation of this incident is given as I have heard it; I do not vouch for the accuracy of its details.

The British Minister in Sucre—the capital of Bolivia—was on a certain occasion invited, with his wife and daughters, to dine by the then President of the country. The President was unmarried, but lived with his mistress, and due to this fact the Minister attended the banquet alone, not bringing the ladies of his family. Much offended at this procedure, the President made it a cause of quarrel; violent hands were laid on Her Majesty's representative, who was subjected to indignities—tied on a donkey with his face to the tail, and in that fashion escorted out of the city. When Lord Palmerston—the then Minister for Foreign Affairs—heard of this outrage, his anger was intense. "Bolivia!" he said. "Where is Bolivia?" And, turning to his secretary, added: "Bring me a map. We will bombard their capital if instant reparation is not made!" The map being duly brought, he scanned the—to him—unknown continent of South America, and at length discovered that Bolivia was on the western side thereof. But here was a dilemma. A British cruiser could hardly reach the capital, for the simple reason that it was on the other side of the Andes, a good many thousand feet above the elevation of the sea, and hundreds of miles inland. "Well," said the statesman, "we cannot send a cruiser—bring me a pen and ink!" And taking the pen, he drew it across Bolivia, crossing it off the map. "Bolivia no longer exists," he said; and from that time until about two years ago when the present British Minister in Lima re-established relations, diplomatic intercourse between the two countries had ceased. But there was a sequel to the crossing-off of Bolivia. As soon as the doughty President of that country heard of what had been done, he also called his secretary. "Bring me a map," he cried. "Where is Great Britain?" And having found it, he emptied the contents of his ink-pot over it. "Great Britain no longer exists!" he exclaimed.

CHAPTER XXXIII

PIRATES AND BUCCANEERS; EARTHQUAKES AND TIDAL WAVES

CALLAO was ever, in its earlier history, a favourite point for the operations of old-time buccaneers. From the moment when the theories and aspirations of Columbus crystallised to action, and Isabella of Spain pledged her jewels to give him funds, that vast continent of South America, and especially the West Coast, was deemed by the Spaniards their property. But it was also deemed by British adventurers a fair field for their exploits. According to the Spaniards, those who set forth from England's shores towards the Pacific were "pirates and buccaneers"—or, at least, that is the name by which they are generally described by Spanish chroniclers. The most famous of British adventurers in those regions was Drake, and Drake truly was a thorn in the flesh for the Spaniards of those days. Zapata, the Peruvian writer, from whom I have elsewhere quoted, gives a long list of "pirates, buccaneers, corsairs, and filibusters," as he terms them, principally British. Of Drake he says:

"In 1567, Francisco Drake, a native of the County of Devon, England, or as others have it, born on board a ship, was the first pirate who *infested* the coast of South America, commanding the *Dragon*, which was a ship of his squadron. Drake again, in 1577, equipped a squadron of five ships in Plymouth, whence he set forth on 15th November, pretending that his destination was Alexandria; but, turning again to the Southern Seas, he entered them by the Straits of Magellanes. He searched the coasts of Chile, and near Valdivia captured a ship with 200,000 gold dollars. Without it being known he arrived at Callao, and of twelve ships in the bay he captured one laden with

silver, and cut the cables of the others. From here, continuing his hostilities at Cape San Francisco, he captured a vessel with 13 boxes of silver and 80 pounds of gold. With these spoils he sailed as far north as 80 degrees, when he went to Java. Afterwards, doubling the Cape of Good Hope, he returned to England, and presented Queen Elizabeth with 800,000 dollars; having laughed at the eleven Spanish ships of war, which, to restrain these insults, had been equipped in 1580 by Don Francisco de Toledo, with instructions to wait the pirate at the mouth of the Straits. In 1595 Drake fitted out another expedition in England, by order or patronage of Queen Elizabeth, of 28 ships. With these he returned to the West Coast, carrying out in all their ports indefensible cruelties which exceed humanity. He invaded the city of Rio de la Hacha. With this invasion and that which was made by the pirates—Bartolomé, a Portuguese; Rec, a Brazilian; Francisco Lelonois and John Morgan—the famous fisheries of the finest pearls of our America were destroyed. From here Drake went to Portobello, with the same design that he had formerly had, but without disembarking he died suddenly, whilst anchored in view of the *plaza*."

Zapata hardly does Drake justice, but it is not to be expected that Spanish or South American chroniclers would do so. He harried their shores continually, and certainly took away large quantities of gold and silver by means of his great audacity and bravery. "Impossible," said the Viceroy of Lima, Don Francisco de Toledo, when he heard of the advent of Drake in Callao, "impossible that there could be a heretic pirate in the Pacific"—that ocean where until then no English keel had ever violated the waters. Was not this the sacred region of his most Catholic Majesty of Spain! But it was too true. It was the keel of the daring British Admiral, and, having got wind of a Spanish barque, laden with gold and silver, which had just left for Panama, he cut the cables of twelve vessels in Callao to prevent pursuit, and sailed forth to overtake the treasure, setting every stitch of canvas on board the swift *Golden Hind*—its prow to Panama. Imagine them bowling along, good reader, over those blue and placid seas, the faint Andes against the Eastern sky,

and the illimitable Pacific on the port side. Admiral and men strain every effort, and trim their sheets as only British seamen could. But the wind drops. Are they discouraged? Out go the boats, and for three days they towed the vessel, until off Cape Francisco they spied the fleeing plate-ship, laden with treasure. Like hawks they must have descended upon it, and, according to the Spanish chronicles, they "bagged" some £900,000.

From where did these great shipments and quantities of gold come? I have endeavoured to answer this question in other chapters. They came from the vast *placer* and other mines of the interior of Peru, which, only half-worked, are still—as I have said elsewhere—awaiting the enterprise of modern miners. I have sojourned long in those far-off regions,

"Where rivers wander o'er sands of gold."

There on the classic Marañon, or in the mines of Sandia or of Cuzco, the midday siesta conjures up to the imagination the figures of toiling Indians under the lash, their task-masters; the helmeted soldiers, the cassocked priests; the pack-mules with their packets of golden dust, dug from the Andean valleys. Away they went across the bleak *puna*—the desolate steppes of the Cordillera, past the regions of eternal snow—"antres vast and deserts idle"—down to the burning plains of the coast, and thence on board the ships for Spain, to run, perchance, the gauntlet of Plymouth "pirates." The yellow metal so hardly won, too often with blood and cruelty, fell sometimes into the hands of Drake of Tavistock or others; and my thoughts rebound from those ancient mines, and scenes, and ponderings, to far-off Devon, with its green hills and restful vales, welcoming the wanderer again!

"Let us alone. What pleasure can we have . . .
In always climbing up the climbing wave?
All things have rest, and ripen towards the grave.
Give us long rest, or death, or dreamful ease!"

But, fortunately, the voice of Nature has no such teaching as this—at any rate for the Anglo-Saxon mind; and I arise from my siesta to see what my Indians are doing,

and if they have performed their task. Pardon, therefore, this digression, good reader.

Drake, after that exploit, found the place too hot for him, and, hearing about the Spanish ships that were waiting to receive him at Magellanes, tried to return to England by the supposed north-west passage. He went north as far as Oregon—Drake's bay still bears its name on those shores—much beyond San Francisco in California. But, seeing that he was getting very far north and approaching a very cold climate, he changed his course, and returned to Plymouth by the Indian Ocean and the Cape, having gone completely round the world. It is a remarkable thing that the splendid great bay of San Francisco was not earlier visited or discovered, but, as all travellers who have seen it can understand, the narrow, foggy entrance of the "Golden Gate," as it is termed by the Californians, might easily be passed without seeing it.

From 1678 onwards, a large number of adventurers are described by Zapata, as "pirates, filibusters, bandits, corsairs, and buccaneers"—the greater part of British nationality—and many others Dutch and French, who visited those regions with various objects. Many of them deserved the titles bestowed upon them, for their object was to sack and destroy coast towns, and obtain booty of gold and other treasure. Some of them, however, went on more peaceful errands, and even those whose errand was the useful one of charting the coast seem to have shared the same fate as those whose purpose was robbery. Some of the bolder spirits entered the Pacific Ocean by crossing the Isthmus of Panama and stealing or constructing vessels in that port, but the greater number either went round Cape Horn or through the Straits of Magellan. Some of these made for the island of Juan Fernandez — the abode of "Robinson Crusoe" — which seems to have been a sort of resting-place before descending upon the coast towns of what are now Chile, Peru, Ecuador, and Colombia. A large number of them were undoubtedly

repulsed or destroyed by the Spanish authorities of these towns, or by the Spanish fleets; but the greater part seem to have obtained good booty and returned to England, either running the guantlet of the Spanish ships awaiting them at Cape Horn, or the Straits, or going westwardly and round the Cape of Good Hope for Albion's shores again.

From the day when in 1520 Fernando de Magallanes, a Portuguese, discovered the Straits which bear his name (and for which his pilot, Sebastian del Cano, a Spaniard, was given the arms of a ship upon a globe with the motto, "Tu solus circumdedisti me") until 1744, Zapata describes the adventures of more than fifty "pirates" and expeditions (including the names of Morgan, Hawkins, and others), the greater part of which were British, and whose exploits have often been described. Many of these were fitted out at Plymouth, and Devonshire furnished many of the brave fellows of their crews, and many of these never returned to beautiful Devon from those interminable seas and sterile shores of the Pacific. Spanish bullets, ambuscades, fevers, shipwrecks, scurvy, fatigue, and other kindred attendants of that historical epoch accounted for many of them. Devon paid a considerable toll in Spanish America, but the names of her children are not forgotten, for, below the epithets of buccaneer and pirate, are also those qualities of manhood, adventure, and bravery which are the foundation of the British character, and which have carried the British name and flag to all quarters of the globe. All honour to the brave men of Spain who defended the lands they had discovered and the riches they had acquired, and all honour to the brave spirits of Britain who disputed — far from their homes — the possession of these! Their strivings and warrings are over—they were the class which generates progress and which advanced the march of civilisation.

I recollect, early in the year 1906, whilst homewards bound—I was going over the wonderful defences and fortress walls of Cartagena in Colombia: walls metres

in thickness and miles in length, which defend the city from the sea—a Spanish companion said to me: "These were made against your countrymen, in the days when the outlying portions of the Spanish Empire were as much a part of that Empire as the colonies of Britain are to her in these years of God! . . ."

Callao, like other coast places of South America on the Pacific, has suffered terribly from earthquakes and tidal waves during its past history. The Pacific Coast, both of North and South America, is especially subject to these phenomena, as witness the recent terrible occurrences in San Francisco, Mexico, and Valparaiso, the former and latter places something like 6,000 miles apart. One of the most disastrous earth movements and tidal waves which have visited Callao was that of the 28th and 29th October, 1746.

Various descriptions of this event have been written, but it will be interesting to describe it here, and I will translate from the periodical *El Callao* of that city, from an account published on 28th October, 1905, the anniversary of the catastrophe. It says:

"It was in Lima, on the night of the 28th of October, 1746. The greater part of the inhabitants of the city had retired, or were just retiring after coming from church, where they had celebrated the feasts of Saint Simon and Saint Judas. Only the richest persons, of noble lineage or title, were exchanging visits at that hour, accompanied by their escorts of slaves and attendants. The moon shone radiantly from a clear sky. The clocks in the church towers had struck half-past ten, when a sudden and violent shaking of the earth threw many people out of their bed, amid the most frightful confusion. Three minutes this violent shock lasted, and during this brief time Lima was reduced to ruins, a large number of its inhabitants being buried among the *débris*.

"In the imagination of that credulous people this cataclysm was the day of judgment: that final day which the Catholic religion expects as a last earthly tribunal, separating the good from the bad. In the time it takes to relate it the whole work and construction of 211 years was destroyed. In a city which contained 60,000

inhabitants not more than 25 houses remained standing; and, moreover, the great shock was followed by others—as many as 200 being counted within the subsequent twenty-four hours. The Jesuit priest, Pedro Lozano, witness and survivor of the catastrophe, narrated, a few days after the event, the following account:

"'Of the two towers of the Cathedral one fell on to the domed roof, and the other to the belfry, destroying the greater part of the edifice, which will have to be demolished. Almost similar has been the destruction in the five magnificent churches of the city, as well as in 64 lesser temples, chapels, and monasteries. The fall of the large buildings consummated the ruin of the smaller, and filled the streets with wreckage and fragments. In their excessive terror the inhabitants strove to flee, but some were buried beneath the ruins of their houses, and others, as they fled along the streets, were crushed by the falling walls on every side. The triumphal arch with the equestrian statue of Philip V. fell, and was broken to pieces. The same fate befell the Viceroy's palace, and the Viceroy, Don Jose Manso do Velasco, showed his fortitude and wisdom, and took what measures were possible for the salvation of the inhabitants. The Tribunal of the Inquisition fell to the ground, as also the Royal University and the Colleges. Everything, in short.'

"The people slept in the squares and gardens, and monks and nuns wandered about the streets. Of the twenty-five monks of the monastery of Carmen thirteen were crushed by the walls. Strange it seems that that terrible time should have taken place when Catholicism was in all its splendour, and the faith of the inhabitants of Lima in its zenith, for the Holy Office of the Inquisition was operating. Yet no one dared to approach the churches; on the contrary, they fled from them, notwithstanding that all knew that these are the houses of God. Three days passed, during which 260 shocks were felt, and the decomposition of dead bodies in the ruins began to produce an epidemic. No matter where it might be—streets or squares—trenches were opened to bury the dead. In spite of this the terrible putrefaction continued, as there were the remains of more than 3,000 mules and horses rotting in the ruins, as well as other animals. The number of persons killed was calculated at five or six thousand."

It might have been supposed that the catastrophe

was now at an end, but what happened on the 30th was full of terrible sensation. Whilst the inhabitants were still under the impressions of their misfortunes, seeking fathers, mothers, brothers, or other loved ones, there suddenly appeared in the streets of Lima a negro mounted on horseback, his eyes starting from their sockets, and shouting in accents of terror: "The sea is coming! The sea is coming!"

"This new alarm gave rise to the most extraordinary scenes. Every one sought to flee, and crowds hurried frantically towards the San Cristobal hill, climbing ruins and fallen walls in their flight; and terrible it was to see the people, anguished and terrified—sons carrying sick parents, and parents their children, in one wild rush where none looked back!

"'The shocks continued all day,' the account says, 'accompanied by subterranean noises, and the unfortunate people imagined that the earth was about to open and swallow them. Fear and excitement alternated with public confessions, preachings by the priests, and general absolutions. Thousands of persons were heard confessing their crimes and weaknesses, so that God might pardon them; and as they were all sinners, none lent ear to the confessions of others, being too much occupied in recounting their own misdeeds.'"

Famine followed, for the bread shops were in ruins, and the cargoes of wheat on board the ships at Callao had been submerged. Curious scenes were witnessed. A priest went about the city, naked, wounding himself in penitential frenzy, ashes on his head, and the bit and bridle of a mule in his mouth, crying: "This is the justice of the King of Heaven upon sinners!" and beating himself with an iron bar until the blood rushed forth.

"In Callao the most awful catastrophe occurred. After the shock the people endeavoured to rush away from the city, but the city gates were locked at that hour. Whilst the inhabitants who had not been destroyed by the falling walls prayed to God for compassion, they noted a terrible phenomenon. The sea went out for more than 2 miles from the shore, forming immense mountains of water that appeared to reach to the sky. All hope was lost. The religious and the irreligious asked pardon for their sins,

and mercy from heaven. There was no mercy shown them! The mountains of water rushed forward with horrid crash as if the whole universe were advancing to overwhelm the doomed city: submerged the ships in the bay, carrying some of them over the walls and towers that had resisted the earthquake, and covered the whole city. . . . When the waters retired nought remained of Callao but the two great doors of the city and a piece of the wall! . . . "

It is stated that the wave reached for 3 miles inland towards Lima, and that its level was more than 150 feet above normal sea-level. This I can well believe, in view of the masses of driftwood which still remain far above high tide on the Peruvian coast further south, and which I have elsewhere described, in the account of my journeys there.

Earthquakes have formed a terrible scourge to the South American coast, ever since earliest history, and doubtless since the formation of the Andes. These phenomena are not necessarily due to the action of volcanoes, but to movements brought about by the release of strain in the strata of the formation of the land and the mountains, there can be no doubt. On this coast exist vast differences of level. The Andes rise to great altitudes, fronting on the coast, and the ocean extends to vast depths a short distance out at sea, in some places there being no anchorage for ships quite close to the land. This condition of height and depth in juxtaposition undoubtedly affects the general stability of the region.

I have experienced numerous slight earthquake shocks, and in one place in the Andes recorded them almost daily for a period of five months — earth tremors, varying in intensity. The feeling engendered by a serious earthquake shock is curious and unpleasant. It is not necessarily only the fear of being crushed by falling walls or roof, but it seems to be borne upon the mind for a moment that there is nothing stable in the universe, and that the world has nothing save chance to ordain its march—soulless chance, which may ruthlessly, and at any instant, plunge it into chaos! The finite mind of poor man, accustomed ever to look towards some unknown yet protecting Power, to

catch some rays of hope and reassurance in his mundial state, seems to feel this protection withdrawn, or non-existing, and his heart is seared by the depths of a momentary despair. Probably this feeling accounts for the remarkable scenes witnessed during severe earthquakes, especially among peoples of a superstitious or ultra-religious nature, who see in a natural phenomenon the displeasure of an angry God! There is, also, what might be termed the moral effect of earthquakes, which is undoubtedly strong.

In Caracas some time ago, after a severe shock, thousands of couples who had been living together, unmarried, went through the marriage ceremony. Somewhat similar mention was made regarding the San Francisco and Valparaiso disasters. I have heard of "conscience money" being returned after an earthquake shock, in South American cities where I have been. I recollect on one occasion being at a meeting of the Directors of a Company in one of these cities. Some of the Directors were of the "bloated capitalist" species who delight to form trusts, and one in particular—a man with a large belly, and consequently rather slow of movement—was endeavouring to have something agreed to which was decidedly reprehensible, and against which I had protested as being unfair to absent parties. We were in the midst of this discussion, when I felt the well-known quiver of a coming earthquake shock. My companions felt it too: it was the day after the news of the San Francisco devastation had arrived, and the morning papers were full of the occurrence. A low, rumbling, subterranean noise was heard, such as often accompanies the phenomenon, and the windows rattled ominously. The stout capitalist and the others started swiftly for the door, their faces blanching with terror, and reached the *patio* outside; the physically developed one having been much impeded by his stomach, which prevented his quickly getting out of a rather narrow doorway. The shock was of short duration fortunately, and my companions returned to find me sitting in my chair, from which I had not risen. It is useless to rush for

the door in such cases, and quite as dangerous. "The cold-blooded Englishman remained!" commented my stout fellow-Director, as he resumed his seat, whilst another said something about the weather, as if he had gone outside with the object of observing it. However, to point the moral: on resuming our discussion it was seen that the method of procedure before advocated, and which I had considered unfair, was dropped. "Probably another course would be more advantageous," they averred.

The Geographical Society of Lima is now correlating shock occurrences, notices of which are sent telegraphically to that body in Lima from all places in the interior of Peru, by official order. An account of these phenomena since earliest times has been recently published in their *Journal*, and among the earliest spoken of is that of the earthquake of the 13th May, 1647, in Santiago, Chile, which caused nearly 2,000 deaths. On the 31st March, 1650, the strongest earthquake shock ever known in the city of Cuzco took place. It is stated to have lasted a quarter of an hour, and was

"so horrible that, in this short time, it threw down all the convents, churches, and houses. The people rushed about breathlessly, calling on heaven for pardon and mercy, beating themselves and confessing their sins; horror and fear being caused even in the hardest hearts. Twenty-four days the disturbance lasted, with frequent shocks day and night, some as severe as the first one, and as many as 500 were counted during the month. The earthquake spread devastation far and wide, according to this account, and reached as far south as Arequipa. In the Andes surrounding Cuzco there were great burstings of volcanoes, opening the earth in places, swallowing up roads and horsemen, damming up the rivers with mountains hurled therein, and destroying the bridges over the Apurimac river.

"So furious was the shock that the Priest of Cucho, on his return from a confessional, in descending a hill-slope formed of shale, was overtaken by the top of the mountain, which descended upon him; and his clothes having been caught by a rock he remained suspended for five days over an abyss, in an inaccessible place where the Indians could

not possibly succour him. Being a virtuous person, and a man of letters, he took profit of this time that God gave him, and, seeing the impossibility of escape, passed the days in prayer, and at length expired."

The Cathedral was wrecked, and the image of the Virgin was kept dry from the heavy rains under a tent. A marvellous occurrence also took place, says the account.

"An image of the Virgin, painted in oils upon canvas, that existed near the choir door in the Church of San Francisco, and before which was sung daily, after vespers, *Tota pulchra est*, was broken across the face. A painter, going some days afterwards to restore it, found it without sign of damage—the canvas better than before, and the effigy so beautiful that there was no necessity for human hands to touch it!

"On the 31st March, 1683, an Aurora Borealis appeared to the east of Lima, sending forth columns of fire and sparks, that lasted as long as an Ave Maria. This meteor caused great fear among the people, who were just leaving the procession of Our Lord of the Earthquakes. In Cuzco, on the 2nd of August, 1700, a sharp earthquake shock was felt; and after some days there was seen towards the west a comet of a white colour, extending from the horizon to the zenith, and which lasted for fifteen days. In 1707, on the 17th December, there occurred a formidable earthquake that lasted the space of an Ave Maria. The dust arising from the ground and fallen edifices was such that the place remained for hours in twilight. A house was moved by the earthquake from one side of a river to another, with its occupants. Some Indians who had taken refuge in a chapel near the small village of Chapi-chapi, found the image of the Virgin at the door of the church, without it having been moved by any one from its niche. The Indians informed the *cura*, who ordered the image to be taken to the village; but on raising it, there fell such a tempest of hail as obliged them to change their intention, and when the image was restored to its niche, the storm ceased."

A long list of earthquakes and their disastrous effects follows, hundreds of shocks having been experienced in all parts of the country, and including that in 1746, already

described in Callao. A Dominican priest, Father Alonzo del Rio, of known virtue, acting under the impulse of a premonition, an hour before that terrible event went out into the streets, crucifix in hand, and exhorting the people to commend themselves to God. He was taken for a madman! In the following year, in the month of February, a notice was posted in the churches, requiring

"All women, of whatever class, to use clothes which should reach to the feet, so that when they rode on mule-back their legs could not be seen. Also the arms were to be covered to the wrists!"

"On the 20th, the Viceroy (Ecclesiastical as well as Civil authority) formed a procession, carrying the wondrous image of the Virgin of the Rosario, and in a crystal urn the sacred bones of Santa Rosa and San Francisca Salona, patron saints of Lima."

"From the 28th October, 1756, to the 16th February, 1747, there were counted in Lima 400 earthquake shocks. After the Callao wave and destruction, among other incidents, there were observed four persons floating on a pile of wood, whom it was impossible to approach or succour, but from the top of the cliff, where their faint cries reached, the *cura* absolved and blessed them, when they perished in view of the multitude."

"In this same catastrophe the coast north and south of Callao was inundated, and in some places hundreds of corpses, battered to pieces by the floating wreckage, were thrown up and left by the retiring tide."

Such, in brief, are extracts from some of these fateful occurrences. It would be tedious to attempt to enumerate all the earthquake shocks of Peruvian history, so numerous have they been. During my stay in Lima I felt, on one occasion, a severe shock, and a statue of Saint Peter on the parapet of the Cathedral opposite gave a half-turn upon its pedestal, and remained reversed. This, of course, was due to the seismic movement, and was only one of other occurrences—of falling chimneys and cornices, and cracking of church towers throughout the city. The procession of religious persons and priests for the placating of Divine anger and supposed prevention of earthquakes is still regularly conducted in Lima.

There is something pathetic about the description of these occurrences. The terror of the people; the intercessions for mercy; the supposed miraculous events; the fear of Divine anger; the implacable and seemingly heartless acts of Nature, to whose immovable ear are directed the agonised appeal of thousands of human beings—Nature, to whom the destruction of her creatures in an earthquake bears, perhaps, a relation such as the act of a man, who, thoughtlessly treading upon an ant-hill, strikes destruction to its inmates!

But the most remarkable condition relating to earthquakes and kindred catastrophes is the quickness with which they are forgotten. The ants, perturbed by the footstep, feverishly reconstruct their ant-hill; man, crushed by falling ruins, builds up his walls and towers again on the same spot, and in the same manner as before the cataclysm that destroyed him. Is it constancy and hope, or unreason and imprudence? At any rate, it seems remarkable that he should build the same kind of structures as those which fell. The chief source of fear and danger in a earthquake is that of falling buildings; yet buildings could be constructed such as would resist any movement. Nevertheless, in Arequipa, which once suffered terribly, vaulted roofs are still built. In Valparaiso and San Francisco the enterprising spirit of the Chilean and of the American is already raising up their buildings, but they will differ little from the former type of those which were destroyed. Lima and her sister-cities of the Pacific Coast are exposed to the same fate, at any moment, as has befallen the Chilean and Californian cities, yet their inhabitants slumber on in blind fatuity, and take no steps to ensure safety in the construction of their dwellings.

One moral is impressed upon the traveller by these occurrences—the fragility of man's structures, the evanescence of his riches and his plans, the vanity of his selfish acts. All, all, go down before the least breath of Nature; nothing remains but the memory of good;

nothing is stable save the spirit of rectitude and the consciousness of Infinity.

"The soul, secured in her existence, smiles . . .
The stars shall fade away, the sun himself
Grow dim with age! . . .
But thou shalt flourish in immortal youth
Unhurt amid the war of elements,
The wreck of matter, and the crush of worlds!"

CHAPTER XXXIV

COLONISATION, COMMERCE, RAILWAYS

As has been shown throughout these chapters, one of the chief requirements for Peru's development is immigration. The corollary to that statement is: "What has Peru to offer to immigrants?"

The first requisite is land. Peru is divided, topographically and climatologically, as has been shown, into three principal regions: viz., the Pacific coast-zone; the Andean slopes and plateau; and the Montaña, or region of forests. Is the coast-zone suitable for immigration? It is to a certain extent. Valuable agricultural products are grown there, but this must be done by means of irrigation, it being a rainless region. Of course, the capacity of a country for absorbing immigrants, especially such a country as Peru where industries are largely agricultural, depends largely upon the amount of land available for cultivation. Due to the conditions prevailing on this coast-zone, the irrigable land is but a fraction of the total area. That is to say, the waters available (without storage) from the rivers which flow westwardly to the Pacific Ocean and water this region, give a volume which could irrigate but a small portion of it. There are, of course, other methods of irrigation, as artesian wells, which have given excellent results, so far, in this zone, as was to have been expected from its formation; and water-storage in reservoirs, of the superfluous run-off, from the rivers, as practised in India. In comparison with the east coast of South America, in similar latitudes, that of Peru is wonderfully temperate and healthy, from reasons which have been given elsewhere. The

drawback to the valleys is the *paludismo*, or light malaria which is met with in places; but this is not necessarily general nor always serious. This zone—about 1,500 miles long and 60 to 90 wide—offers, then, conditions which will support a certain considerable population, which may cultivate many products, such as cotton, sugar-cane, ramie, rice, maize, grapes and vines, olives, tobacco, bananas, and a large variety of other fruits and plants. Peruvian cotton and sugar-cane are too well known to require much description. They rank among the best in the world in quality. Of course, the lands most suitable for these products near the coast are taken up, but the intending settler can either rent from the owners, making payment in a percentage of his crop, or take up virgin land and institute irrigation works. There are large areas which can be secured for this latter purpose by Government concession.

Coming next to the foot-hills and slopes of the Andes: these, on the western side, are also in a semi-rainless region, but bear pasture, due to the heavy mists which at certain seasons lie there. They, with the great tablelands or plateaux, support vast herds of sheep and cattle, llamas, and alpacas, etc. They are generally covered with prairie grass, and wheat, barley, oats, and other products have their habitat there, up to certain elevations. The climate is bracing and healthy, and the panoramas magnificent, as has been shown in the chapters upon Peruvian travel. Great areas of land can be acquired, suitable for cattle ranches. It is upon the slopes of the Andes that the principal mining regions exist, and these mines, and the requirements to which they give rise, will afford employment to large numbers of immigrants, in other than agricultural pursuits. There is no doubt that the cattle and wool industries are capable of very great extension in these regions. The more detailed conditions will be seen from a perusal of the foregoing chapters of this book.

The eastern slopes and foot-hills of the Andes are of a different character to the western, in that they are in

a region subject to heavy rainfall at certain seasons. There is a splendid zone of territory here, extending all along the base of the Andes and bordering on the rivers which parallel the chain, as the upper portion of the Marañon, and the southern rivers, before described. Anything can be grown here, and when the territory has been rendered accessible by means of railways, it ought rapidly to become a well-populated region.

We now descend into the Montaña, or region of forests. This has been sufficiently described in the chapters devoted to it. It is a region of enormous possibilities, and it is astonishing that in this greedy and progressive age it still lies fallow. Gold, timber, and india-rubber are some of its chief products at present, but it is a territory of the most varied resources, of vast agricultural possibilities, and has been described by many travellers. Its varieties of climate and vegetation are never-ending.

There are, then, three main regions: or it were better to describe them as five, viz.:—the coast-zone; the western Andean slopes and valleys; the plateau of the Andes; the eastern slopes and valleys; the Montaña. Here is choice of climate, products, topography, and every other environment that the varying habit or desire of the European emigrant might dictate. He will not find ready-made homes; he will have to carve his own way, and spread his own table in the wilderness; but he will find the material at hand. He will find lands untilled, rivers unfished, forests unaxed, mines unworked—why? Because the surplus labour and capital of the world has not yet reached this land; it lies fallow still.

I will now give some extracts from published descriptions of their country by the Peruvian Government, and various Peruvian and other writers, relating to immigration. There is, of course, in some of such descriptions a tendency to poetical effect, and at times to exaggeration. The usual phrases of "inexhaustible riches," "eternal spring," and so forth, are generally found in pamphlets relating to matters of this nature, but the wise observer

knows that the conditions of travel and settlement in new countries are always hard, although at the same time he philosophically seeks the compensating advantages which they afford, and forbears to sigh for the "flesh-pots"—often imaginary—of the land he has left. The official pamphlet says:

"Comparing the area and population of Peru with that of some European countries, we have:

Country.	Area in square miles.	Population per square mile.
Peru	701,600	4·1
France and Algeria . .	391,500	188·0 (France)
Germany	208,800	270·0
Spain	195,000	97·0
Great Britain and Ireland	121,000	346·0
Italy	110,500	294·0

The population of this great territory of Peru is only about 3,000,000; and the above clearly brings out the fact that Peru contains a vast, sparsely-populated territory greater than that of any European country except Russia, and capable of containing many more millions of inhabitants."

"The population of the coast might be fairly estimated at 750,000 inhabitants. The white race is the most largely distributed along the coast, and constitutes the main element of progress and wealth in the country. The city of Lima alone contains more than 70,000 foreigners. The bulk of the Peruvian population — over 2,000,000 of the Indian race—lives in the Sierra (the uplands and valleys of the Andes), which is the healthiest region in the world. These natives are strong and frugal, and are much sought after as mining labourers. They are descendants of the ancient and noble race of the Incas, and are of light-coloured skin."

"Notwithstanding its tropical position, the country is healthy and free from those dangerous diseases which sometimes prevail in the Torrid Zone. It enjoys every variety of climate, owing to great differences of elevation. Along the coast the mean temperature is from 64° to 68° Fahr. Those who desire cooler, or cold weather, have only to ascend the slopes of the Andes. On the Sierra it is as cool as the south of England; on the coast it is as warm as the south of France, whilst it is not much

warmer in the Montaña. On the plateaux it is as cold as in Scotland. A fair idea of the mean temperature in each of the three zones of Peru may be gathered from the following:

Coast.	Sierra.	Montaña.
Lima, 66° F.	Cajamarca, 52° F.	Iquitos, 75° F.
Piura, 77° F.	Huaraz, 59° F.	Huanuco, 74° F.
Moquegua, 63°.	Arequipa, 57° F.	Santa Ana, 72° F

"The region of the coast is sunny, and rain seldom falls. At Lima, and all along the coast, the sun is tempered by the cool southerly breezes, and the climate throughout the year is well suited to Europeans. The sun is rarely hidden by clouds for a single day in the year. The maximum temperature in Lima in summer is 78° Fahr., and in winter 59° Fahr. The climate of the Sierra is exceedingly invigorating; it is subject in the higher parts to rain and snow. In the Montaña there are two seasons: dry from May to October, and wet from November to April. The total annual rainfall is estimated at about 70 inches. A typical town of the Montaña is Chachapoyas, 7,600 feet above sea-level, possessing a delightful climate whose temperature ranges from 40° to 70° Fahr., with a mean of 62° Fahr. Another similar place is the City of Moyobamba, standing in a most luxurious situation, at an altitude of 2,700 feet, with a mean annual temperature of 77° Fahr."

"In the industrial establishments on the coast-zone there is always a demand for good foremen and skilled employees to direct the work in the fields, and also for mechanics, sugar-boilers, distillers, carpenters, blacksmiths, wine-growers, wine-makers, and workmen in general. In some of the valleys only a portion of the rich land is under cultivation, and is still available for agricultural purposes."

"The production of sugar per acre on the coast is calculated at 700 quintals of cane (101·5 lbs.) and 56 quintals of sugar, as against the highest foreign (Java) production of 312, and 31·2 quintals of cane and sugar respectively."

The production of sugar in 1905 was 160,000 tons. As to cotton, the coast produces (Piura) the remarkable cotton called vegetable wool, known in Europe as "full rough" and "moderate rough." This cotton is unique

in its class. Other kinds of cotton are grown, as Sea Island, Peruvian Mitafifi, and the American smooth variety. All these Peruvian cottons fetch higher prices than the American cottons. The world's production of raw cotton cannot cope with the world's demands; and it is well to draw attention to the fact that in Peru there are enormous areas suitable for its cultivation, under irrigation, such as could supply any deficiency. The value of the production of cotton and its by-products in Peru for 1904 was £415,000.

The Peruvians have recognised the necessity for scientific advance in the main industries of their soil, and the School of Agriculture has given good results. The School of Mining is also a flourishing institution. The amount of cultivable land in the coast-zone is governed by the available water supply, as I have shown. Not so, however, in the Montaña, where other conditions obtain. From a pamphlet written by a Peruvian statistician, Señor Alejandro Garland, upon the matter of colonisation in the Montaña, I translate the following:

"In the north of Peru, on both sides of the river Marañon, there are more than 16,000 square leagues of land for colonisation. Even deducting 50 per cent. of this amount for forests, rivers, rocks, etc., there remains 8,000 square leagues (72,000 square miles) for cultivation. There is no exaggeration in valuing at thousands of millions of dollars the capital these lands would represent with fifteen years of colonisation and work. No other territory in South America offers such facilities as this—the facilities of being in communication with two oceans, the Pacific and the Atlantic. The millions of acres in this section of our territory could form a great centre of colonisation and commerce, here upon the head-waters of navigation of the Amazon. The highlands of this region enjoy a temperature similar to that of the south of France; whilst the valleys are hot. The products of both a tropical and a temperate zone are encountered together; in the same basket you may put barley, wheat, oranges, bananas, pineapples, and even coffee, chocolate, and tobacco. To their riches are to be added others still greater: in every hill are

minerals of copper, gold, and silver; and, in short, as soon as the hand of man shall penetrate there these gifts of Providence must be utilised, for Providence has prepared there the most beautiful recompenses, such as have never before satisfied the aspirations of man."

"In this region the best conditions are united for colonisation by European races. The climate is healthy and delicious, malaria is unknown, as the altitude neutralises the effects of tropical latitude. These enormous plains which Peru possesses in her northern region, on the eastern slopes of the Andes, at 1,500 to 2,000 feet above sea-level, more or less, are entirely appropriate for colonisation by European immigrants."

The region above described includes that of which I have spoken as the "Upper Montaña," and it is certainly a magnificent territory, almost unknown, so far, to the outside world. It is towards this region that capitalists and colonists should direct their attention. They can reach it either by crossing the Andes from Pacific Coast ports, or by ascending the Amazon from the Atlantic coast of Brazil. This splendid region will be opened up by the railway uniting the port of Payta on the Pacific Coast with the port of Limon on the Marañon, which I have advocated elsewhere. The enormous Department of Loreto, of something like 270,000 square miles in area, is a possession of which any nation might be proud. The capital of this Department—Iquitos, river port and town—must assuredly become a most important commercial and strategic centre in the future. The line of railway will give through communication from the Atlantic Ocean *via* Para, Manaos, Tabatinga (which latter place is on the Peruvian frontier), Iquitos, and Port Limon, to the Pacific Coast at Payta, as elsewhere described. The interesting pamphlet written by the Peruvian statistician, Señor Garland, on this subject, from which I have translated elsewhere, deals with this project also.

Of course, Agriculture and Mining need not occupy the attention only of the immigrants into Peruvian territory. Businesses of all kinds call for capital and labour. Manufactures will be obliged to expand greatly

in the future, and small capitalists could do well in many of the various branches of manufacturing, of modern communities; and such matters are more likely to be remunerative than the mere shopkeeping which so many of the foreigners—especially the Italians—pursue in South American countries.

More capital is the great need of the country. Agricultural and mining enterprise is, at present, stifled for want of money, as well as want of labour. There are several banks in the capital, such as the Bank of Peru and London, the Italian and German Banks, and the National Banks; but their powers are not adequate to the needs of the country, and certainly will not be, in view of its probable future expansion. A bank which could lend funds for developing mines ought to give profitable results.

The following extracts I translate from the account published from the edition of 12th January, 1906, of the *Comercio*, one of the leading newspapers of Lima, reviewing the state of trade of the Republic of Peru.

"The fiscal wealth of the country has increased in more than 100 per cent. during the period of peace and tranquillity which began in 1895. Even better results have obtained during the past year—1905—and this is largely due to the activity and energy of the present administration. The best exponent of public wealth—Commerce—has risen in Peru in value during the past year, to a figure which it has never before reached—not even during the famous times of the guano and the nitrate, which Chile now enjoys, and which gave us the fictitious prosperity which caused the war. The imports and exports for 1905—the latter being slightly greater than the former—are calculated in £10,000,000: the highest figure which the business of the country has ever reached."

The currency of Peru is established on the gold basis, and the fact of the British pound sterling being a legal and current coin is very convenient for foreigners.

The great essential need for the development of the South American Republics on the Pacific side of the

Continent is, as I have reiterated elsewhere, the construction of railways. Political dissension and questions of boundary will largely diminish when means of communication between capitals and the outlying parts of Republics are better established, and when more frequent travel takes place between neighbouring states. *Pronunciamientos* and revolutions have been stifled in Mexico, as an example, chiefly by the construction of railway and telegraph lines.

The existing railways of Peru are principally short lines which run normal to the coast, and die a natural death on encountering the slopes of the Andes. There are two exceptions, as has been described elsewhere. The railway from Mollendo surmounts the Andes and gives outlet to that vast region of Titicaca, Cuzco, and part of Bolivia. The Central Railway from Callao and Lima, constructed at enormous cost amid bribery and corruption, years ago, surmounts the Andes and taps important mining and agricultural regions, taking freight up and down under heavy charges, due largely to heavy grades and cost of maintenance. But it stops there in the Andes, although it is projected to continue it onward and downward again easterly towards the Amazon. The great Pan-American railway, which would traverse Peru longitudinally, seems not to emerge yet from the land of paper or of dreams. It is strange that, notwithstanding the great undertakings in railway work being carried out in other continents of the world, in Canada, Africa, etc., no great railway spirit or genius arises to link together the wonderful continent which Columbus found, from end to end. But it will come.

As regards Peru, she is too poor to undertake very much, although she is doing what she can in her territory with several short lines and extensions, one of which goes to the old Inca capital of Cuzco, and another to the fertile valleys of Jauja and Huancayo. Longitudinal railways should be built, one on the plateau and one on the coast, and those extensions form part of such a system. Living is dear in the cities of the coast, which depend

much for the necessaries of life on the steamers, and which would be cheapened by railways connecting them with each other and with agricultural centres, both cis-Andean and ultra-Andean. This is only a question of time, when the attention of foreign capitalists may be turned that way, and, indeed, there are various matters of this nature pending. For the construction of railways Peru offers valuable concessions of territory, such as in any other continent would seem to form sufficient inducement. These lands will, in the future, be as valuable, or possibly more so, as those which in North America—Canada—are witnessing such marked changes.

The total length of railways in Peru is about 1,400 miles. Of this the Central takes about 200, and the Southern or Mollendo—Arequipa, including Puno and Cuzco—450 miles, whilst the rest is distributed among about forty-five other smaller systems. The Peruvian Corporation, which, as before described, controls the greater part of these railways, has made marked improvements recently; and due chiefly to the growing development of the country, the earnings are increasing considerably. Thus, whilst in 1891, according to the published figures, the profits were about £56,000, in 1904 they were £220,000; and in 1905 a further marked increase took place, the earnings being £703,900.

As has been intimated elsewhere, there is a long-standing disagreement between this Company and the Government of Peru, which it is not within the province of this book to comment much upon. There is doubtless something to be said on both sides, but some reflections may be made. The Company certainly possesses a magnificent property, and opportunities which are susceptible of great development and extension, as stated in another chapter, and they should be generous and conciliatory. And as regards Peru, it is certainly better for the country that the railways should be administered by foreigners and non-officials. Government ownership of railways would be disastrous; they would simply and inevitably develop into political machines, such as is the

unfortunate fate of government and municipal controlled enterprises in all American countries—North or South. The Government will do well to leave railway enterprise in private hands, and to foster their construction—as they are at present doing—by judicious subsidies. And greatly bound up with the matter of railways is that of immigration and colonisation. Some experiments have been made with the establishing of foreign colonies in Peru during the latter half of last century; most of which have failed. Much literature and theory have been emitted upon the subject; but no amount of theoretical examination and discussion will cause immigration to flow into a country until a natural pressure from the emigratory source takes place. This natural pressure can, of course, be attracted or diverted towards this or that part of the earth's surface, given conditions acceptable for the life of Europeans upon the new land. And if Peru is to become a centre of rest for part of this pressure—and there is no reason why it should not—attention must be called towards it, and some railways—or at least a main railway—made into the territory it is intended to settle. Evil reputations, also, must be dissipated, both of governments and of territories—that is to say, of revolutions and lack of security on the one hand, and of fevers, wild beasts, and other exaggerated matters on the other. This region of the Amazon has persistently refused to become colonised, and in the half-century or more since steam navigation began on this great river (1853), neither the fact of its natural resources nor the efforts of the States occupying it have been sufficient to cause it to become the scene of activity which has long been predicted for it. Nevertheless, the existence of these great navigable highways, facilitating access, is beginning now to cause a marked change and progress, which will undoubtedly increase day by day, as the region becomes more known.

It is not too much to predict for Peru in the near future a great development upon stable lines of her territory and resources. She yields staple articles for the world's

commerce—cotton, copper, wool, sugar, india-rubber, and a host of other valuable articles—whilst the opportunities for trade and manufacture are considerable and growing. Her lands and general attractions are certainly not inferior —they are in many cases superior—to those of other and even more remote countries which are now under development, and she is inhabited, moreover, by a peaceable people, "thirsty for progress, extending the hand of welcome to the foreigner who seeks her shores." Peru in transition offers a field of operation for the capitalist, the merchant, the immigrant, the agriculturalist, the miner ; and it seems probable that the tide of development and prosperity must sweep that way before long, as it has to such a marked extent in Mexico, Argentina, and other kindred countries of the New World.

CHAPTER XXXV

SOUTH AMERICAN RELATIONS

THE Peruvians consider that their country is one of those which will be most benefited by the construction of the Panama Canal, and there is no doubt that this assumption is made in reason. The through traffic from Europe and the New York side of the United States, which will result with the West Coast of South America if this work is successfully carried to completion, should cause the rapid development of the countries of that littoral; and Peru, Ecuador, and Colombia, being those nearest to Panama, will feel the effects earliest. Peru, moreover, possesses the best harbours, such as Payta—which I have described elsewhere—Chimbote (a splendid bay), Callao, etc. In the same way that Chile, the southernmost country of South America, has benefited most by the steamers from Europe and North America which pass the Straits of Magellan, or the Horn, so the northernmost countries will benefit by the steamers which arrive *via* Panama. Hitherto they have been isolated: cut off from European influence by that narrow topographical barrier of the isthmus of Panama, which it is expected the North Americans will eliminate. Indeed, the Americans owe the world something in this respect in atonement for the machinations which caused Panama to declare itself a separate community—machinations which, it is considered, emanated from the United States, taking from the Republic of Colombia her great and valuable birthright of the Canal site. The affair was one of expediency, and not of morality, and viewed as an academic question was un-American, using the word "American" in its true sense. But the act was partly

brought on by the mistaken policy of the Colombians themselves, and they have, moreover, received some compensation. The subject has now gone down into history, and if new conditions do not arise all the nations will be benefited by the building of the Canal. Whether the North Americans will adopt a cosmopolitan policy, such as Great Britain's in such matters, only the future can show. "Quien vive, verá!"

As shown elsewhere, Peru is demonstrating a wise and reasonable attitude towards her neighbours as to questions of boundary; and this is necessary, for the constant friction over matters of territorial rights, principally in the region of the Amazon, has continually disturbed the South American peace. Peru has had but one friendly neighbour for some time past—the Pacific Ocean, whose billows wash her 1,500 miles of coast. Her other neighbours seem, sometimes, to be bent upon enlarging their own borders at her expense, in view of the fact that she is almost unarmed and peaceably disposed. Some of them have even accused her of being the disturbing element; but this reminds the foreign observer of the old controversy between the wolf and the lamb, regarding the turbidity of the stream!

The relations between the various South American countries are—not unlike those of other continents often—governed by measures of expediency or self-interest, rather than justice. The policy of Chile towards Peru, in the question of Tacna and Arica, partakes of this character; and this is unfortunate, for the natural progress and development of the two countries, rather than clashing, runs upon parallel lines. In their relations with each other South American countries should not forget the significance of the proverb of their race:

"To-day to thee—to-morrow to me!"

for none know what the future may have in store on that changeable continent. As to Ecuador, Peru's northern neighbour, it is commonly stated that she is under the influence of Chile in regard to the policy of antagonism to Peru. Whether or not this is really the case it is difficult

to say. The Ecuatorians are a people of progressive spirit, and will probably develop a judicious foreign policy; and their boundary question with Peru once settled, there need be no question between the two countries. Chile is a virile and aggressive nation, and moreover wants, or will want, more territory. She cannot expand in her narrow strip between the Andes and the coast, and when the nitrate of Tarapaca is exhausted she will look about for fresh fields for enterprise and revenue. This may be satisfied by her alliance with, or absorption later of, Bolivia, for the latter Republic has allied herself with her former antagonist, Chile, instead of her former ally, Peru. The Argentine Republic and Chile glare at each other over the dividing summits of the Andes, maintaining a mutual respect born of the knowledge of equal strategic strength and balanced armaments — a factor for peace on the Continent. Peru has carried on a friendly flirtation with the Argentine, which also tends towards stability, and offsets the Chilean antagonism towards Peru. On the Atlantic side, Argentine and her neighbour Brazil alternately coquette and argue, each bent on being considered the dominating power. Peru and Brazil jealously regard each other's boundaries in the region of the Amazon—Brazil showing a disposition, as the stronger power, to encroach upon her neighbour, as also a latent — and sometimes manifest — desire to restrict navigation on this river as regards Peru.

The development of the Monroe Doctrine, and its enunciation by statesmen of the United States, has been received by South American communities with varying sentiments. "The policy of the big stick," as it has been termed, has been reviewed, criticised, rejected, accepted, by turns. They hardly know what to make of it so far. Some of them pronounce it a menace to their sovereignty or freedom of action. To the aphorism of "America for the Americans"—the war-cry of the Doctrine—some of these states have placed the ironical corollary of "For the North Americans!" Peru looks favourably towards the United States, and somewhat in the spirit of the law-abiding citizen who beholds with satisfaction the stalwart

policeman at the street corner, for Peru has little to fear and much to gain by North American influence in South America.

It has been criticised that the Americans of the United States have arrogated to themselves the general nomenclature of "Americans," for the term geographically and ethnologically belongs, of course, to the Spanish as well as the Anglo-Saxon people of the New World. North American representatives—Ministers and Consuls—have, however, received instructions from Washington to use the term officially. A North American Minister of Foreign Affairs (Mr Root) has recently concluded a tour of the whole of the South American coast on board a United States warship, visiting all those Republics on both the Atlantic and the Pacific in the interests of the Monroe Doctrine and general American affairs. He has, of course, been well received. There are no people more hospitable and courteous than the South Americans, and no doubt the journey will be historic. But it is doubtful if any great change will take place in the mutual relations of the two Americas, or that the hegemony of the United States will be generally accepted as regards South American foreign policy. The Republic of Argentina is now a rich and powerful community, and has been so created by the influence of Europe, and the gold and labour flowing therefrom, and is not likely to adopt any course which might alienate or offend this. Somewhat similar conditions obtain in Chile. The Chilians consider themselves the "British of South America"—a term sometimes varied also as the "Yankees of South America"; and the development of the resources of their country has been largely due to British gold and enterprise, as, indeed, as concerns the latter, to a certain extent was their independence as a State. They are an independent and virile race, and would be offended at the least suggestion of North American leading-strings.

Considering for a moment the subject of European Colonies under political possession in South America, would such be objectionable from an economic point of view? Certain it is that many of the South American

States would have been in a different position now had they been British possessions, although possibly at the expense of other continents civilised by the British flag and the development which followed it. What, for example, would be the loss to humanity in general or the countries in particular if the great German Colony in Brazil grew and obtained political control of some Brazilian territory on the Amazon? Would not the enterprising German nation pour out her sons and her treasure from the Fatherland, to spend them on that fruitful soil? Undoubtedly; and a great progressive community would be formed in those vast regions, which at present the few million Brazilians can hardly touch. There could be no loss to mankind in this, rather a gain; and Germany must have a Colonial outlet. Would the Brazilians consent to this; would they or any other South American nation consent to yield up part of their inheritance? It is doubtful; although they might consider the sale of some of the huge areas they are continually taking from each other in the heart of the continent, and which is only inhabited at present by hordes of Indians and monkeys. When and how does the possession of unsettled territory begin? By foreign Colonists who settle there, and, later, exact political rights? This was how the United States obtained the huge State of Texas from the Mexicans, as well as other vast States which constitute a large part of their vast Empire.

But if the Germans obtained part of South America, with political control, the Monroe Doctrine would be violated. Also with regard to German Colonies, the phenomenon is to be observed that these seem to flourish best under some other *régime* than that of the Fatherland. The "mailed fist" and conscription methods and sentiments of the authority by which that great nation allows itself to be dominated does not seem conducive to the independence of spirit which the Colonial citizen of an Empire acquires and exacts.

There are several points of view from which the

Monroe Doctrine may be considered. It may be thought of as a protecting agency from the rapine and predatory nations of Europe bent upon conquest of defenceless American Republics in the New World; and it is highly probable that if it did not exist much territory in those continents would have passed by conquest into European possession. Whether both humanity in general and South America in particular would have benefited by this is an interesting matter for discussion—probably they would. Yet certain sentiments of liberty, patriotism, and Americanism would have been outraged in the process, and from that point of view the doctrine is philosophical. None can deny, also, that its original meaning and enunciation against a wicked "Holy Alliance"—a wolf in sheep's clothing of fanatical religious powers—was a measure for the protection of civilisation, in a sense; and by Great Britain this doctrine was invented, and by the Americans defended. As far, also, as Great Britain is concerned the maintenance of the Doctrine is of considerable advantage, for by it the United States protects British America in time of war against that country's enemies. Any attack on Canada or other part of the British Empire in the New World would embroil the United States. The wonderful growth of Canada itself will soon be a factor in this matter also, and Canada is becoming an American Power.[1]

The other point of view for considering the Doctrine is that of its selfish nature rather than the altruistic attitude in which it is represented. Its tendency may be, perhaps, to raise up barriers to intercourse and commerce between the Old and the New Worlds. Why should barriers of influence or pretension be raised up between nations? The present age tends, rather, to dispel them. Is there, also, anything hypocritical in the Doctrine in view of the North American's attitude and action towards other States, as witness Panama, the Philippines, etc.? Will it be possible, also, for the United States to take moral charge of the Republics of

[1] British-American, that is.

Central and South America and to arrange matters with their great European creditors? The future must say, and it alone will show, whether these States will acquire stability under this Ægis, or whether they will develop temerity towards the easy repudiation of their obligations—a further development of the marked characteristics which they possess already. Unfortunately the business and administrative methods of the North Americans are not such as to warrant their yet taking up the position of mentor to any one; probably the responsibility as a world-power which they are acquiring will bring greater worthiness among them; and one thing is certain—the closer their association with Great Britain, the sooner will their capacity for righteous administration be developed.

The improved relations between Great Britain and the United States, which of late years has so fortunately developed, will, in time, influence Englishmen in South America. At present British subjects living or engaged in business in the Spanish-American Republics—and they are numerous—do not like the North Americans: not to use a stronger term. This is due to various causes. The unfortunate methods of the Cleveland Administration during the Venezuela incident with Great Britain left a lasting impression on British inhabitants of Spanish America. They consider that Britain was affronted and bluffed, and the impression was given to the South Americans that she feared to hold her own, when in reality it was a wonderful forbearance she was displaying towards the United States. This resulted in a loss of prestige for Britain in South America, for the Spanish-American character does not readily grasp the sentiment of political generosity, but is prone to applaud success, in whatever form it be gained. Also, British traders in South America are generally old-established, and upright in their methods, and they resent Yankee shrewdness. Of course, there is a slight admixture of envy in this, or rather the feeling of regarding the Americans as interlopers in a field previously their own.

But in general terms, the influence of the United

States in South America must make for stability and order. It can hardly prejudice European affairs—commerce cannot be altered or controlled by such matters; and, so far, European trade with South America holds its own. If it loses in the future it will be due to its own methods, or to the commercial methods of the United States, if these develop superiority over European methods.

But, putting aside commerce, the development of Peru and kindred nations of South America depends largely upon the immigration of labour from Europe. Labour from the United States will not go there, and Asiatics are looked upon with growing disfavour. Italians, Spaniards, Austrians, and others will continue to enter; and in the future this immigration must rapidly increase, due to the restrictions now being placed upon entry into the United States. South American countries cannot yet afford to place restrictions of this nature: they want population at all hazards, and continue to welcome all comers to their freer shores. The United States as a home for the poor and oppressed is rapidly becoming a closed quantity.

And here may be permitted a momentary digression upon this point. Has any American country the right to close its ports to the entry of any individual, saving, of course, known criminals? To whom, may it be said, does America belong? Is it permissible—philosophically speaking—to weed out the lowest element of immigrating humanity which arrives on American shores, and retain only the best element? Is it just or wise? If it were to continue indefinitely it would be disastrous for the emigrating nations: to have their dregs thrown back upon them and to give up the cream of their people. Of course, the remedy for that lies somewhat in their own hands—to create conditions which shall keep their people at home. But it must soon be asked at what point in its history has a new country — America, Australia, Africa—the right to place an embargo upon immigrants from the Old World. I have never forgotten

a caricature I once saw in a New York comic paper, when the subject of the restriction of immigration first arose. Upon the quay of a seaport were pictured four pot-bellied and prosperous-looking individuals, wearing enormous watch-chains and sparkling with diamonds—millionaires, in short. This vanguard of civilisation was repulsing with outstretched hands the entreaties of boat-loads of poor and half-starved immigrants from Europe, that they might be allowed to land. And now comes the point. Behind the bloated and prosperous individuals aforesaid appeared respectively the phantom forms of four wretched immigrants, of hunger-stricken aspect—the phantoms of the forefathers of the four individuals who denied admittance to the immigrants of to-day, to the prosperity which they themselves had enjoyed! The picture carries its own moral.

What is to be the future of South America? Children of the same race, are they likely to unify and form one continent and nation, as did the States of North America, their model? At present there is no tendency to do so. The present division is more to the liking of the Spanish-Americans. It gives them opportunity for a multiplication of Presidential and all other executive and official posts, of which they are fond. The jealousies and demarcations between them are as strong as between nations of totally different races, and it would seem impossible yet that a common Chief and Capital could be agreed upon. The territory is too vast, and lacks means of communication. It takes as long to travel from one part of South America to another, as to journey from that continent to Europe. So formidable are the barriers which Nature interposes, in the form of mountains and forests, that the Pacific seaports of Peru are in easiest communication with the Peruvian river ports on the Amazon—as Iquitos—by going round South America, crossing to Liverpool, and going back again through Brazil. This is due to a lack of a trans-continental railway, joining the Pacific Coast with the river system of the Amazon. Peru should construct this railway; the lack of it endangers her vast possession

on the Amazon. Experience has shown even European Powers that great territorial possessions without railways are an element of danger. It is vital for her, both commercially and strategically, to link her Pacific Coast with her river Amazon possessions by a line of railway. If not, the day may arise when neighbours who cast envious eyes will stretch forth perfidious hands upon her Orient!

It is doubtful, also, if the day has yet arrived for these countries to pursue their destiny in common. The continent and its vast resources, so far scarcely touched, will be developed more readily by these varying units of Government, each doing its part, than by one possible Central Authority. The essential condition is peace among themselves—both domestic and neighbourly peace—and then foreign capital and immigrants will naturally flow that way. Fantastic doctrines, also, regarding sovereignty and the regulation of debt-responsibility must be avoided. The laws of "mine and thine" cannot be changed, even in America, be it North or South.

We may, however, as regards unification, indulge our fancy for a moment in possible combinations of South American Republics. Let us place together Peru, Chile, and Bolivia, with a common Capital on the high plateau of Titicaca. Here, in this keen and rigorous region, the governing power of a virile and energetic race might develop. They might acquire something of the spirit—as regards good government and cohesion—of the old Inca *régime* which flourished there. They would control a vast region of millions of square miles, containing the richest mineral region, and the most varied topographical and climatological territory in the world. The spirit of courtesy and the scientific and literary instincts of the people of Lima and Peru, would blend with the spirit of enterprise and daring of the men of Valparaiso and Santiago de Chile, and with the patience of the Bolivian. The stars, stripes, eagles, cannons, and other devices of their various insignia would be blazoned on a common standard which should wave over a thousand leagues of

Pacific Coast, dominate the Andes, and bear its influence into the great regions of the Amazon. It is not an unnatural picture, and against them would be grouped Argentina, with Uruguay and Paraguay, Ecuador, Colombia, and Venezuela, and Brazil.

What a remarkable instance of the present vanity of true economy in human affairs a South American Republic presents! Consider any one of these communities. What are they? They are small bodies of people with vast areas of rich territory such as could keep the whole of their inhabitants in comfort and wealth, if these riches were exploited in a common-sense manner. Not a penny need they ask from Europe, did they but use in a natural way what Nature has given them. Here is gold for coinage, metals for manufacture, cotton and wool for clothing, wheat and meat for food, labour and materials for roads, knowledge for directing their work, and science and art in their midst; in short, all the essentials for a self-centred and self-supporting community which, it might seem, could carry on its civilisation and work out its own salvation and destiny entirely independent from the rest of the world. But it cannot. To do this its rulers and politicians would have to be free from the defects of ambition, avarice, and cruelty, which they display in a degree so marked in comparison with the rest of the civilised world. Indeed, to consummate such a condition philosophers must be presidents, and presidents must be imbued with philosophy — to paraphrase Plato — a condition which does not yet arise. What is civilisation? Does it consist of turning out the greatest number of pieces of finished manufacture in the shortest possible time at the least possible cost, and selling the greatest number to the other nations of the world? Does it consist of loans abroad, of armies and navies? No; though these seem to be necessary adjuncts to the phases through which Spanish-American civilisation must pass. Civilisation might rather be defined as the making use of all the bounties that Nature has provided to a community,

in a philosophical sense, demanding the highest possible standard of life for the individual citizen, as a unit of the whole, and providing him the means whereby he may attain this condition. Civilisation should really consist in establishing a minimum standard of living below which none of its citizen units should be permitted to fall, and which should be the basal plane of higher developments. But none of the nations of the world carry this out yet; could it be expected that South America could do so? Yet it might be more easily accomplished by the South American Republics than by any other community in the world, having in view the small populations there, inhabiting vast and rich territories. It is a common saying in Peru, for example, that the country may be likened to a beggar in rags seated upon a mountain of gold! In these countries there is a mine for every inhabitant; a farm for every child. But alas! for any birth to mankind of a new order or method of social economy, in the New World. Mankind might have hoped for some true and philosophical application of the gifts of Nature to the needs of man in the Americas. Far from it. Man's inhumanity to man is as terrible as heretofore. The prey of man is man, there: as before Columbus sailed, or before the Pilgrim Fathers "moored their bark on a wild New England Coast." President was substituted for monarch—and so the ruler, divested of the *noblesse oblige* which hedged a king, exercised the untrammelled tyranny and petty faults of the common man. Or so it has been in Spanish and Portuguese America, whilst in the Anglo-Saxon Republic of the North more ingenious weapons have been forged by its inhabitants to oppress their fellows. We know, we feel, in our optimistic survey of the world that these are passing phases—evil which shall give place to good; but we also feel that an image has been dashed from its pedestal, and our hearts turn to old Europe, whence the great civilising streams of life and thought and action flow.

These civilising streams must more and more become

directed to South America in the near future, and a fusion of races will take place there which may yet develop principles and methods new and useful to the world at large—the eloquent and idealistic temperament of the Spanish-American allied to the spirit of practicability of the European. For the present the development of this vast continent lies with the matters of railway building and immigration. Vigorous trans-continental construction of lines such as has taken place in the United States, Canada, Africa, and elsewhere, and a diverting of the army of emigrants from the Old World to its great territories, such as in Peru and kindred countries exist, will cause a change in the regimen of South America, such as the observer of to-day can hardly picture.

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